

Review group on the National Children's Hospital

Item type	Report
Authors	Dolphin, Frank; Review Group on the National Children's Hospital
Citation	Department of Health, Review group on the National Children's Hospital. Dublin:2012.
Publisher	Department of Health (DoH)
Downloaded	5-Nov-2017 17:10:23
Link to item	http://hdl.handle.net/10147/621002

Review Group on the National Children's Hospital

**Report to the Minister
7 June 2012**

Foreword by Dr Frank Dolphin, Chairman of the Review Group

It is with great pleasure that I present the Minister for Health, Dr James Reilly T.D., with the report of the Review Group on the National Children's Hospital.

Our work began at the request of the Minister following the refusal of An Bord Pleanála last February to grant planning permission for the hospital. Our Group, appointed by the Minister, involved a highly motivated team of experts determined that this project should go ahead as quickly as possible. They have given unstintingly of their time, their knowledge and their expertise. It has been an honour to work with them on this project which is of such fundamental importance. I would like to thank all concerned for their huge commitment over the punishing schedule of the last ten weeks.

I would also like to thank all of those groups and individuals who met with us and made submissions to us, often at very short notice, and this report should be read in conjunction with those submissions.

I believe that the work of the Group provides the groundwork on which a viable decision can be made. While it was not our role to select the site we have taken care to consider the most viable and practical options available.

Let us not forget that this issue is first and foremost about children and more importantly about children who are ill and their families. It is about giving them the hospital they need and the services they deserve. It is above all about the adults of this nation committing unambiguously to our children. It is a once in a lifetime opportunity to get this right.

Dr Frank Dolphin

A handwritten signature in black ink, appearing to read 'Frank Dolphin', with a stylized flourish at the end.

Chairman

Acknowledgements

Special thanks are due to the following, who provided assistance and support to us in our work over the past ten weeks.

- Ms Clare McGrath, Commissioner of the Office of Public Works, and Mr Liam Egan, Assistant Principal Architect and Mr Gerard Bourke, for preparing technical assessments of proposed hospital sites
- Mr Niall Cussen and Mr Cathal Black, Department of the Environment, for their assistance with preparation of maps of the proposed hospital sites
- Ms Rachel Kenny, Senior Planner, and Ms Fionnuala May, County Architect, Fingal Co. Council, and their colleagues in the County Council, who prepared detailed design and planning briefings on a range of possible sites within the County, and particularly in relation to the site adjoining Connolly Hospital
- Eddie Conroy, County Architect, and Paul Hogan, Senior Planner, South Dublin Co. Council, and their colleagues, for their detailed design and planning feasibility study of the proposed site adjoining Tallaght Hospital
- John O'Hara, Deputy City Planner, Dublin City Council, and his colleagues in the Planning Department, for advice on possible sites within the City
- Mr Paul de Freine, HSE Estates, who provided assistance and information to the Group
- Ms Simonetta Ryan, Ms Celeste O'Callaghan, Ms Frances Norton and Ms Sinead Curristan, Department of Health who provided the secretariat

We also want to particularly thank the following members of the Youth Advisory Council, who took the time to meet with us and to give us their views and insights on the new children's hospital:

- Ms Erika Shine
- Ms Aine Fox
- Mr Leon Ennis
- Ms Sinead McGuinness
- Mr Kevin Brennan
- Ms April McCabe

Executive summary

Our Review Group was appointed in March 2012 to advise the Minister for Health on the options for the new children's hospital, following the refusal by An Bord Pleanála to give planning permission for the proposed National Children's Hospital at a site on Eccles Street. We were given specific terms of reference and a short deadline.

Over the past six years, there have been a number of reports and reviews relating to the proposed new children's hospital (McKinsey 2006, Joint Task Group 2006, KPMG 2008, Independent Review 2011). In all cases, the reports and review concur that co-location with an adult teaching hospital and preferably tri-location with a maternity hospital is the optimal choice. Having reviewed the reports already prepared and considered their analysis and opinions, and having also consulted with a wide range of professionals in the field, we are also of the view that co-location is essential and tri-location optimal. We recommend that the Minister remains on this path.

A new children's hospital is not only a significant building that will serve our children for many decades. It also embodies our vision of care and health of our children. From here international best practices are established, while at the same time a full range of local and national services are provided. Also, co-location with the right partner(s) should enhance synergies and opportunities for all, creating a dynamic powerhouse of research, innovation and education. We developed a process for site selection which prioritised co-location with an existing adult teaching hospital in Dublin (70% of the children attending the new hospital will come from the Greater Dublin Area.)

We wrote to six Dublin teaching hospitals inviting a proposal for the new children's hospital to be located on their site. We also received a proposal from the Coombe Hospital which was supported by St James's Hospital. St Vincent's Hospital chose not to submit. The proposals from the hospitals were considered in detail under the terms of reference specified by the Minister. We would like to acknowledge the large volume of work and excellent proposals that we received within a very short period of time. We acknowledge that these are indicative proposals requiring further scoping and analysis if selected.

We assessed each of the proposals having regard to our terms of reference. We also visited the sites. Having reviewed the sites, and the options presented to us, we are in a position to present these options to the Minister. Each option brings with it strengths and weaknesses. In all except two cases, the land is in the ownership of the State or its agencies. Some have clear sites while other sites require preparation. While some hospitals bring an immediate range of specialties and research capacity, others bring flexibility and longer term opportunities.

Having reviewed in detail the An Bord Pleanála decision of 23 February 2012 we believe it is important to consider the scale and size of this building and the impact such a building has

on its environment. The capacity of the site to accommodate the building and future potential developments was also considered. Traffic, accessibility for ambulances and cars, commuting options for staff, and parking were all considered. Specific scales of parking were considered as were their impact on the local road network. Up to 90% of children presenting at the Emergency Departments of the three existing children's hospitals currently arrive by car.

The group received a large number of unsolicited site offers. It is important to emphasise that these were unsolicited. In some cases, offers of land were made free of charge and we would like to acknowledge the generosity of the landowners involved. However, only sites that were supported by a Dublin Academic Teaching Hospital were considered.

Should the Government decide to choose a greenfield site option, we believe that this will need to include an adult teaching hospital and may have ramifications in terms of zoning, planning, procurement and time.

We note the National Paediatric Hospital Development Board was established by Statutory Instrument in 2007. Its brief has been to build the hospital on the Eccles Street site. It does not have wider responsibility for the governance, management and integration of the new institution. We believe such integration would better serve the overall project

One of the outcomes of this review has been to highlight the potential for cost savings for this project. On the other hand, in our research we noted that the ICT budget for this project was not included in the original envelope. We strongly recommend that it is now incorporated given the level of savings that have been indicated to us and the critical role of ICT in the future functionality of this hospital and its integration with the numerous satellites that will be part of it. We believe this to have been a significant omission in this project to date.

The group also met a wide range of interested parties, some of whom asked to meet us and others who were invited because of their specialist knowledge and expertise. In all we met 21 groups (see Appendix 1). For our part, we found this exercise extremely informative because in many cases it provided expert opinion and practical insights and perspectives. The groups varied from professional bodies to young people who are patients of the existing children's hospitals. We also received many written submissions and letters. There was a consistent message of urgency and a unanimous desire to see the new children's hospital built.

This decision is not only about site location. It is also about vision, it is about the service that will accrue from that vision and about how it improves the care of our children. It is a complex decision.

Table of Contents

Part 1	Introduction and background to the report	
	1. Introduction	10
	2. The new children's hospital: policy and chronology of events	12
	3. Approach adopted by the Review Group	17
Part 2	Assessment criteria	
	4. Children's healthcare issues	22
	5. Research and education issues	27
	6. Access, planning and design issues	30
	7. Cost and value for money	34
	8. Project timelines	37
	9. Guiding principles	40
Part 3	Assessment and recommendations	
	10. Outline of unsolicited site offers	44
	11. Assessment of strengths and weaknesses of co-location proposals	48
	12. Identification of risk factors and suggested mitigation measures	74
	13. Conclusions and recommendations	78
Appendices		
	1. List of meetings	
	2. Sample of letters to hospitals	
	3. Correspondence from An Bord Pleanála to NPHDB	
	4. Greenfield and urban sites: note on the cost issues	
	5. A note on planning context	

Part 1

Introduction and background to the report

Appointment of Review Group

The Review Group, chaired by Dr Frank Dolphin, was appointed in March 2012 by the Minister for Health, Dr James Reilly, T.D., to consider the implications of the decision of An Bord Pleanála in February 2012 to refuse planning permission for the proposed new children's hospital on a site at Eccles Street, Dublin 7.

Membership of the Review Group

Dr Frank Dolphin (chair)
Mr Simon Clear
Mr Michael Collins
Professor Jonathan Hourihane
Professor B.G. Loftus
Mr John Martin
Professor Clodagh O'Gorman
Ms Louise Shepherd
Professor Owen Smith

Terms of Reference of the Review Group

- To inform itself about the planning considerations and processes affecting this project.
- To consider the different options which now exist for progressing the construction of a national children's hospital having regard to –
 - (a) Government policy on the delivery of health services, including accessibility and paediatric services in particular and best clinical practice considerations,
 - (b) the cost and value for money considerations of the different options,
 - (c) the likely timelines associated with the different options,
 - (d) the implementation risks associated with the different options.
- To advise him, in the light of these considerations, on the appropriate next steps to take with a view to ensuring that a national paediatric hospital can be constructed with minimal delay.
- To report to the Minister within 56 days of the first meeting of the group.

Structure of the report

The report is structured to address the Terms of Reference as follows.

Part 1 outlines Government policy on the delivery of health services, with particular reference to the new children's hospital, and sets out the history of the project leading up to the refusal of planning permission in February 2012. It analyses the planning implications of that decision in relation to the Eccles Street site. It outlines the Group's approach, which entailed considering a wide range of potential sites. The Group devised certain criteria for assessing the suitability or otherwise of all suggested sites. The Group's consideration of the complex issues involved was greatly facilitated by meetings with a large number of groups and individuals with relevant expertise and/or involvement in paediatric healthcare and research.

Part 2 sets out the detailed issues relating to children's health, planning and design, access, cost and value for money and programme delivery. It concludes with a set of guiding principles developed by the Group following its consideration of these issues.

Part 3 applies the Group's guiding principles to all the suggested sites and then assesses the strengths and weakness of those sites which meet the fundamental requirement of offering co-location with an adult hospital and at least potential tri-location. Implementation risks associated with the different categories of site locations are identified, and appropriate risk mitigation measures are proposed. Finally, the Group's conclusions and recommendations are set out.

Supplementary information is provided in the Appendices and at [www](#). [to be completed].

Introduction

The purpose of this chapter is to outline Government policy in relation to the new children's hospital as it has developed since 2005, and to set out the chronology of events which preceded the submission of a planning application to An Bord Pleanála in 2011. The final section will analyse the planning implications for any revised application on the site at Eccles Street of the Board's reasons for refusal.

Children's Health First, 2005

In 2005 McKinsey and Co. were engaged by the Health Service Executive (HSE) to advise on the provision of tertiary paediatric care nationally and the provision of secondary care for the Dublin area. Their report *Children's Health First* in 2006 recommended that:

- The population of Ireland and projected demand could support only one world-class tertiary centre. This centre would have the following attributes:
 - It would be in Dublin
 - It would ideally be co-located with a leading adult academic hospital, to capture relevant sub specialist and academic linkages
 - It would have space for future expansion, including education and research facilities
 - It would be easily accessible through public transport and the road network.
- The centre would be at the nexus of an integrated national paediatric service, and would also provide care for all the secondary needs of the Dublin area.

Decision to build on the Mater campus, 2006

The Government accepted these recommendations in 2006. A Joint HSE/Department of Health and Children Task Group was established to advise on the optimum location in Dublin of the National Paediatric Hospital, as recommended by McKinsey. Although at that stage the outcome of the later KPMG review was not known, the Task Group decided that potential sites would need to demonstrate the capacity to accommodate a maternity hospital on site, as well as being co-located with an adult teaching hospital. Following a consultation process with the six Dublin adult teaching hospitals and with patient advocacy/representative groups, the Task Group advised that the new National Paediatric Hospital should be built on the Mater Hospital campus. This recommendation was endorsed

by the Board of the HSE and by Government. RKW, an established healthcare planning consultancy, was engaged to prepare the high level framework brief for the new hospital..

National Paediatric Hospital Development Board established, 2007

The Government established the National Paediatric Hospital Development Board (NPHDB) in 2007 to deliver the project.

The RKW report was presented to the newly established NPHDB. RKW reviewed demand and capacity requirements, appropriate space standards for a world-class tertiary hospital (including research and education), and the preferred physical configuration of services on the Eccles Street site. The RKW report provided the framework for the preparation of a detailed design brief in 2009.

KPMG report on maternity and gynaecology services in the greater Dublin area, 2008

In 2007 consultants KPMG were commissioned by the HSE to review maternity and gynaecology services in the Greater Dublin Area. Their report in 2008 recommended that:

- Maternity services should be co-located with both adult acute services (to allow the mother access to a full range of medical and support services should the need arise) and paediatric services (when foetal or neonatal surgery or other interventions are required), i.e. tri-location of maternity, paediatric and adult services.
- Three new facilities should be developed in Dublin to deliver maternity and gynaecology services. Two of these facilities should be co-located with an adult hospital (Tallaght and St. Vincent's Hospitals) and one tri-located with the proposed National Paediatric Hospital on the Mater campus at Eccles Street.

While the planning application submitted in 2010 for the new children's hospital did not include the proposed new maternity hospital (to replace the services currently delivered at the Rotunda Hospital), provision was made for that hospital within the Mater campus on a site immediately adjoining the new children's hospital, to facilitate corridor access between them.

2009

An integrated design team was appointed by the NPHDB to prepare a planning application and environmental impact statement. Initially, pre-planning consultation meetings were held with Dublin City Council which is the relevant planning authority for the site, but changes to planning legislation in 2010 required that planning applications for such major

healthcare projects, being strategic infrastructure developments, be submitted directly to An Bord Pleanála.

2010

Pre-planning consultations with Bord Pleanála officials took place in late 2010 and early 2011. The officials advised that the pre-application process was not designed to assess the particular planning merits of the proposed development but indicated that issues around the size and mass of the proposed building and the restricted nature of the site would need to be addressed in the planning application.

In 2010, the NPHDB published the National Model of Care for Paediatric Healthcare in Ireland, which included the provision of an Ambulatory and Urgent Care Centre (AUCC) at Tallaght Hospital. In line with international best practice, the model of care requires a shift, where appropriate to the patient's condition, from inpatient care to ambulatory or short stay care, and from hospital-centred care to home-based care. Inpatient care should be reserved for those children with acute severe illnesses and chronic complex conditions. The National Model of Care envisages ambulatory care – including outpatient clinics, surgical and medical day care procedures, nurse specialist and allied health professional services – being provided at the new children's hospital on the Mater site, at the AUCC in Tallaght and at regional and local hospitals throughout Ireland.

2011

The Minister for Health commissioned an Independent Review in May 2011 around a number of issues relating to the location of the new hospital on the Mater Campus. The Review was carried out under the joint auspices of the National Association of Children's Hospitals and Related Institutions and the European Health Property Network. The independent experts who formed the Review Team, having examined all the issues in accordance with the Terms of Reference set by the Minister, strongly endorsed tri-location with adult and maternity services and made a unanimous and unequivocal recommendation that the development of the new hospital should proceed on the Mater Campus. The Minister confirmed the Government's acceptance of the recommendation of the Review Team and requested the NPHDB to proceed with a planning application to An Bord Pleanála. The application was lodged in July 2011, and a 10-day oral hearing was held later in the year.

Planning decision by An Bord Pleanála, 2012

Planning permission for the new children's hospital on the Eccles Street site was refused in February 2012 for the following reasons:

“The proposed Children’s Hospital of Ireland, by its nature, requires a substantial floor area, in excess of 100,000 square metres, to accommodate the operational needs of the hospital. However, the footprint afforded to the proposed development on the Mater Campus, (circa 2 hectares), has resulted in a proposal for a very significant building in terms of bulk and height, including a 164 metre long ward block, rising to 74 metres above ground. Notwithstanding the general acceptability of the proposal in terms of medical co-location on this inner city hospital site, it is considered that the proposed development, by reason of its height, scale, form and mass, located on this elevated site, would result in a dominant, visually incongruous structure and would have a profound negative impact on the appearance and visual amenity of the city skyline. The proposed development would contravene policy SC18 of the Dublin City Development Plan, 2011-2017, which seeks to protect and enhance the skyline of the inner city and to ensure that all proposals for mid-rise and taller buildings make a positive contribution to the urban character of the city.

Furthermore, the development as proposed, notwithstanding the quality of the design, would be inconsistent with, and adversely affect, the existing scale and character of the historic city and the established character of the local area and would seriously detract from the setting and character of protected structures, streetscapes and areas of conservation value and, in particular, the vistas of O’Connell Street and North Great George’s Street.

Having regard to the site masterplan for the Mater Campus submitted with this application, it is also considered that the proposed development, as configured, would constitute overdevelopment of the site.

The proposed development would, therefore, be contrary to the proper planning and sustainable development of the area.”

It is standard planning practice to cite all relevant substantive reasons for refusal, to assist applicants in deciding whether to submit revised proposals. It is important to note that there was no planning objection in principle to the proposed location of the new children’s hospital. The Board’s reasons for refusal were based solely on grounds of overdevelopment and consequential adverse visual impacts. It should also be noted that the Board did not cite difficulty of access to, or lacking of parking at, the Eccles Street site as reasons for refusal.

In the considered opinion of the Review Group, based on the drawings and photomontages submitted with the planning application, the element of the proposed design which most contributed to the refusal of permission was the excessive height and bulk of the proposed ward block (floors 9 – 16), which surmounted the podium block. Such overdevelopment of

the site could only be alleviated either by substantially reducing the proposed floor area of the new children's hospital – which would be unlikely to meet the requirements of the design brief - or by enlarging the site and thus reducing the overall height.

More recently, the NPHDB's design team has held preliminary consultations with An Bord Pleanála regarding a modified design which involves a significant reduction in the height of the proposed building and which would relocate research and education uses into the 1861 "Old Mater" building (see chapter 11).

Documentation

We were provided with copies of all relevant previous reports, and sought further detailed or current information from the various hospitals, representative groups and individual experts as the need arose.

Formation of sub-groups

To make most efficient use of the training and experience of its members, two sub-groups were formed to report back to the Group on issues assigned to them:

- a) The clinicians' sub-group examined issues relating to clinical specialties and sub-specialties, transitional care for adolescents, co-location and tri-location (see chapter 4), and the integration of paediatric health research and education into the new children's hospital (see chapter 5).
- b) The technical sub-group addressed planning, design and construction issues such as access and parking, cost and program delivery comparisons (see chapters 6 to 8 inclusive), identification and mitigation of implementation risks (see chapter 12).

Ms. Louise Shepherd made a presentation to the Group on child-centred hospital design based on the consultation process for the new Alder Hey Hospital, Liverpool (see chapter 6).

Meetings with representative groups and key experts

The Group received many requests to meet representative groups, and endeavoured to accede to as many of these as possible. We also requested meetings with relevant agencies, interest groups and individual experts. We appreciate the time and effort devoted by all those we met and we benefited greatly from their first-hand experience of the issues involved in the new children's hospital project.

The full list of meetings is given in Appendix 1.

Meetings with hospitals proposing sites for the new children's hospital

We invited the National Paediatric Hospital Development Board to present their revised proposal for the Eccles Street site.

We wrote to the Mater Hospital asking if it wished to make a submission to the Group separate from that being made by the NPHDB. In response, the Mater Hospital, Children's University Hospital Temple Street and the Rotunda Hospital made a joint submission to the Group which they subsequently presented.

We wrote to the other four Dublin Academic Teaching Hospitals (DATHs) and Connolly Hospital, asking if they wished to offer a co-located site for the new children's hospital and a new maternity hospital. Beaumont, Connolly, St. James's and Tallaght Hospitals responded with specific site proposals, which they subsequently presented to us. St Vincent's chose not to submit a proposal.

On the basis of recommendations from the two sub-groups, we decided that unsolicited site offers which were supported by a DATH should be considered. On that basis we invited the Coombe Women and Infants University Hospital to make a presentation of their proposal to us.

Arising from the varying level of information at the presentations, we requested certain floor area and cost data from all six hospitals in a standard format to facilitate comparisons. Sample letters to the hospitals seeking further information, are given in Appendix 2.

Site visits

To familiarise ourselves with the location and character of the potential sites, we visited all six hospital sites. Members of the Technical Group also visited the Belcamp site.

Technical assistance

The Office of Public Works provided us with a planning and construction appraisal of five hospital sites (the Mater site had been the subject of appraisal by An Bord Pleanála) to assess those sites technically and to form a view as to their suitability.

Assessment process

Having reviewed policy and best practice regarding children's health, we agreed that the best health outcomes would be achieved by co-locating the children's hospital with an adult teaching hospital in Dublin. Ideally, tri-location with a maternity hospital should be sought in the interests of seriously ill mothers and newborn babies.

Accordingly, we confined our detailed assessment of potential sites to those offered by, or supported by, the DATHs. We devised assessment criteria derived from our terms of reference including clinical synergies, depth and breadth of research, access, planning and

design issues, project timelines, and value for money. The strengths and weaknesses of each potential site were assessed under each heading.

Part 2
Assessment criteria

The new children's hospital represents the largest piece of infrastructural investment in healthcare in the history of the State. It will send a signal of national intent on the prioritisation of children into the future. Ireland has the highest birth-rate and the largest population proportion of children within the EU. Ireland has the potential to develop an innovative and exemplary model of paediatric care, with a single national tertiary children's hospital setting the standard for the delivery of best attainable health outcomes across primary, secondary and tertiary care.

The purpose of this chapter is to set out children's healthcare issues which need to be considered in assessing the suitability of potential sites to accommodate the new children's hospital, and possibly a new maternity hospital also. This chapter also refers to some important issues with regard to the future development of children's healthcare.

Co-location and tri-location

The case for a single tertiary care children's hospital for Ireland has been generally accepted. Development of this hospital on the same site as an adult tertiary hospital and a maternity hospital is also generally accepted as the ideal "tri-location". Co-location with an adult hospital is the norm internationally, driven by four major advantages:

- access to adult specialists
- access to expensive equipment (such as PET, MRI scanners)
- research and educational synergies
- facilitation of continuity in the care of the adolescent/young adult with chronic disease.

Tri-location of maternity with adult and paediatric hospitals has advantages for mothers in providing rapid and ready access to non-obstetric specialist expertise, and to specialist surgery and intensive care in the case of major obstetric emergency; and for infants with congenital malformations, or complications of prematurity which require surgery. Better imaging allows for pre-birth diagnosis of serious congenital malformations in many cases. These infants can then have planned delivery at a co-located maternity hospital to give them the best chance of a good outcome.

It is acknowledged that over time, paediatric hospitals' dependency on adult specialists will decline as paediatric sub-specialties develop. We also acknowledge that while physical co-

location will facilitate the benefits outlined, it does not guarantee them. Co-location and integration must overcome the following challenges:

- the fragmentation of adult specialties, and the freestanding nature of the maternity hospitals in Dublin, means that there is no readymade ideal tri-location site
- research and educational synergy depends on meaningful regular interactions between clinicians, and requires planning and effort on both sides
- transitional care of adolescents with complex problems requires a willingness of adult hospital services to take on a new and challenging case load, the development of new skill-sets, and a different orientation of paediatric care
- the advantages of the individual co-location proposals must be balanced against the respective design compromises necessary to achieve them

Nevertheless, we concur that tri-location of the new children's hospital with an adult hospital and a maternity hospital is the ideal.

Adolescent healthcare

In recent years, questions have become more prominent about how adolescents' health care should be managed. It is now widely accepted that traditional models of care do not adequately meet the needs of teenagers and young adults. Many young people do not feel comfortable within the hospital setting as they have unique needs of privacy and socialisation that do not fit well either in paediatric wards focused on younger children and infants or in adult services. Indeed the provision of a more consistent medical therapeutic and supportive care approach addressing the unique educational, psychosocial, and emotional needs of this population in an age appropriate facility translates into better outcomes. Therefore, whenever possible;

- adolescents receiving care should be provided with their own space so that they can mix with their own peer group in an age appropriate environment, preferably across existing traditional disease/condition-specific ward configurations
- access to disease specific or treatment specific expertise should be available as required (such as infection isolation)
- adolescents' clinical care should be undertaken by appropriately trained staff, namely experienced professionals who care for them and are able to help them

with their individual needs and in doing so co-ordinate their care across the whole system and at all stages of the patient pathway.

Developing these services for adolescents within the new children's hospital will be challenging. Co-location presents a unique opportunity to deliver innovation and patient focused, rather than disease focused, care. Adolescent medicine and transitional care must be forged from both sides of the paediatric and adult disciplines that will be co-located. Both are evolving specialties which cross many boundaries and will challenge many entrenched beliefs and ways of working. Getting this aspect of Ireland's model of care right will also require a co-ordinated national approach.

The Model of Care

Health services should provide safe effective care as locally as possible. This means an intelligent network of primary, secondary and tertiary care nationally. The new children's hospital, as the centre for tertiary care, will be at the apex of the care network, will set the standard in secondary care, and will also inform the organisation and delivery of primary care. Within the greater Dublin area, the organisation of secondary care, in particular the role of urgent care centres, will depend on the location and capacity of the new children's hospital.

All children in Ireland should have equal access to excellent healthcare, and this should be provided quickly and close to the child's home whenever possible.

The new children's hospital will be part of two hub-and-spoke models of Irish children's healthcare. It will be the hub for the secondary level healthcare for all children in the Greater Dublin area, and it will be the hub for tertiary level healthcare for all children in Ireland. It must have dedicated outreach to other facilities to deliver secondary healthcare in Dublin and to deliver tertiary healthcare in partner hospitals throughout Ireland (see Figure 1).

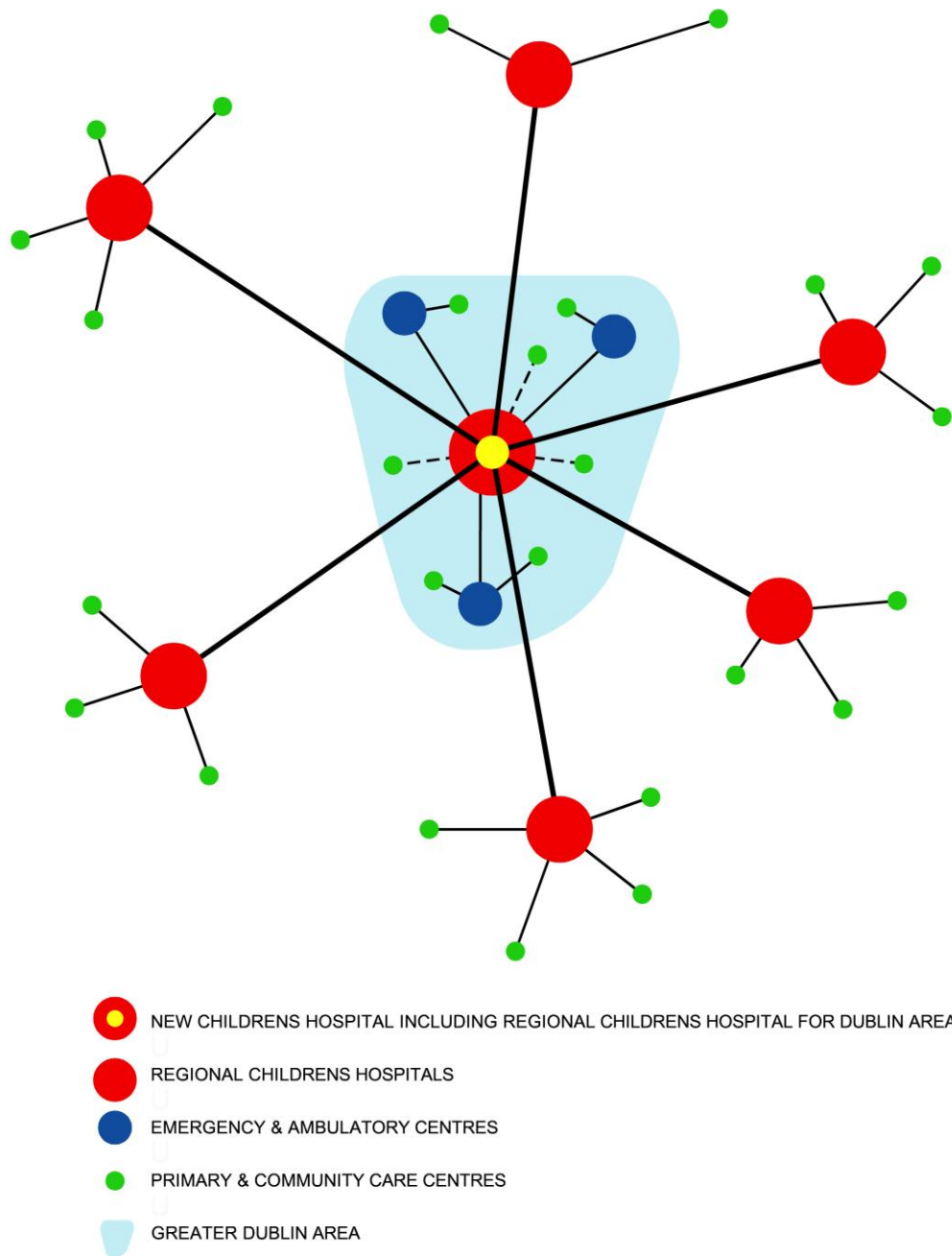
We understand that the development of the HSE's Clinical Care Programmes in paediatrics and neonatology will consider many of the issues relating to how care is delivered.

Primary healthcare

As well as being beneficial for patients, the provision of care that is safe, efficient and effective through primary care centres close to the patient's home reduces the risk of secondary and tertiary centres becoming overloaded with low acuity work to the detriment of true secondary and tertiary care.

Figure 1

NATIONAL MODEL OF CARE



Secondary healthcare

Secondary care requires specialist paediatric input as inpatient or outpatient, much of which can be provided at urgent care centres linked to the tertiary children's hospital – examples include gastroenteritis with dehydration (inpatient care) or troublesome asthma (outpatient care). Children living in proximity to an urgent care centre will not be required to travel to the new children's hospital for treatment of minor injuries or illnesses.

Outside of the Greater Dublin Area, secondary paediatric care will continue to be delivered in over 16 hospitals as at present. These services will require adequate resources to deliver safe effective care, minimising inappropriate use of the tertiary hospital.

Tertiary healthcare (complex conditions)

While the new children's hospital will be responsible for the provision of tertiary care for all children in Ireland, outreach delivery of tertiary paediatric care by subspecialists from the new children's hospital should be available, to minimise multiple unnecessary long journeys to Dublin for some children.

Emergency and non-emergency transport

A dedicated paediatric transport system is urgently required to safely transfer children requiring high dependency or intensive care to the new children's hospital.

Urgent care centres

The number and location of urgent care centres in the Dublin area can only be determined once the site for the hospital is selected. We consider that care must be taken in defining the clinical objectives of these urgent care centres, which should not be so large as to undermine the effective working of the new children's hospital itself.

These urgent care centres should share a common IT platform with the hospital to ensure ease of information and patient transfer.

ICT

Information and communications technology systems are required to support the provision of electronic patient records. This is particularly important for the safe operation of the urgent care centres and in delivering timely clinical care at the bedside, without the reliance on manual delivery of cumbersome paper records. Electronic patient records will facilitate audit, clinical and population research, and clinical governance.

One of the greatest success stories of modern medicine has been the survival rates for childhood cancers which have quadrupled over the past 40 years and now exceed 80% (and over 90% for acute lymphoblastic leukaemia, the most common cancer in children). This progress has been driven, not only by new therapies, but by the clinical research process. Excellence in modern paediatric clinical practice cannot be provided except in the context of basic science research-led enquiry and its translation into clinical practice, which is often called the journey of a discovery “from the bench to the bedside.” At hospitals where clinical research is a major activity, a rich web of interactions can be found among clinical research, basic research and clinical practice activities.

Such improvements have resulted both from specific, step-by-step refinements in therapy but also from improved scientific insights into these diseases. Therefore, basic, translational and clinical research must be a primary focus of the new children’s hospital if it is to become a world class paediatric academic health centre. To achieve this, positive relationships between the research laboratory and the clinic need to be encouraged. In doing so, the new children’s hospital will generate an environment of research enquiry among staff and students - an approach known to improve health care outcomes for children and adolescents.

Top quality research-led clinical care within the new children’s hospital will undoubtedly attract the best students to paediatrics and the best Irish and non-Irish clinical and basic scientists to train and work there. Consolidation of diverse research activities in the new children’s hospital will make it easier for Irish researchers to establish joint research programmes and student exchanges with internationally renowned paediatric research centres as well as other research hubs affiliated with the Dublin universities and elsewhere in Ireland.

The need to engage in research is increasingly understood by families and the wider public. Many adult diseases have their origins in childhood, and many childhood conditions continue through to adulthood. Paediatric research has the capacity to improve the treatment and prevention of childhood, adolescent and adult diseases. It will be crucial for the new children’s hospital that its child health care professionals and scientists engage with their patients, families and the public, advocating for paediatric research.

The biggest challenge for the new children’s hospital will be to provide outstanding patient care. This can only be achieved if the appropriate research and educational infrastructure is in place on the hospital site. Having the clinical research laboratories and the inpatient/outpatient clinical areas on the same campus will greatly enhance the hospital’s

mission to carry out the best clinical care and research and to enhance the education of health care and scientific research staff.

The purpose of this chapter is to set out important access and parking, planning and design issues which need to be considered in assessing the suitability of potential sites to accommodate the new children's hospital, and possibly a new maternity hospital also.

Access and parking issues

The children's hospital will provide the entire country with tertiary care services, and will provide secondary care for the Greater Dublin Area. If there is also to be a new maternity hospital on the campus, it will be one of three serving the Dublin area. Children who are patients and their parents, staff, and visitors to the children's hospital have somewhat different access and parking needs.

It is estimated¹ that about 75% of inpatients will come from the Greater Dublin Area, as will 65% of day-care patients, 72% of out-patients, and 80% of Emergency Department (ED) patients.

Very sick children first seen in secondary care hospitals outside the Greater Dublin Area who require tertiary care will be transported by specialist ambulances to the new children's hospital, with trained staff both stabilising the patient before the journey and transporting him or her safely. The same applies to newborn babies who need to be transferred from maternity hospitals. Because the new children's hospital will also have to facilitate some patient transfers by air ambulance, a helipad should be provided on site, preferably at ground level.

Access and parking for patients arriving at Emergency Departments

Data from the three existing children's hospitals in Dublin shows that about 90% of ED patients arrive by car. As overall paediatric patient numbers are expected to increase by 13% between now and 2021, it would not be possible for any single hospital to cope with such large numbers of ED patients, the vast majority of whom do not require tertiary care. Accordingly, it is envisaged that almost half of such ED patients will be treated at one or more satellite urgent care centres. Such centres are an essential and integral part of the National Model for Paediatric Healthcare as outlined by the NPHDB. Had planning permission been granted for the children's hospital at Eccles Street, a centre would have been developed at Tallaght Hospital. The provision of satellite urgent care centres in tandem with the children's hospital means that car-based traffic generated by ED patients will be distributed between dispersed geographic locations in Dublin. We also note Census

¹ Source: NPHDB

data which shows that levels of car ownership (28%) in Dublin's inner city in 2006 were much lower than the average for the State (80%).

Nonetheless, it is to be expected that most ED patients who do attend the children's hospital will arrive by car, and adequate on-site parking needs to be provided for their needs. We note that the approximately 750 public parking spaces proposed on the Eccles Street site exceed the existing total number of such spaces at the three children's hospitals in Dublin, and that An Bord Pleanála did not raise any planning objection to this level of provision. This provides an indication of the minimum level of public parking spaces which should be provided on whichever site is chosen for the hospital. A higher level may be required if the selected site has a lower level of public transport accessibility.

Access and parking for out-patients and day-care requirements

It should be possible for out-patients and day-care patients, all of whom will have scheduled appointments at the children's hospital, to reserve parking spaces in advance if travelling by car rather than public transport. Similarly, free parking should be provided where required for parents of long-stay patients.

Directional signage

For those parents travelling by car from outside the greater Dublin area, clear roadside signage on the national primary roads into Dublin should advise them which direction to take on reaching the M50, and should guide them from the appropriate M50 junction to the fastest route to the new children's hospital.

Sustainable travel

Government policies on sustainable travel and climate change are designed to promote a modal change from the use of private cars to walking, cycling and public transport, and these policies have been underpinned by very substantial State investment in public transport, both in Dublin and nationally. These policies are reflected in the statutory draft Transport Strategy for the Greater Dublin Area prepared by the National Transport Authority; the Authority is the prescribed body which will be requested to make a submission to An Bord Pleanála in relation to the transport implications of any strategic infrastructure application for the hospital. Also in accordance with those policies, most Dublin hospitals have introduced Mobility Management Plans for staff in order to encourage greater use of public transport. As the provision of free or inexpensive parking has been shown to promote use of private cars, the trend has been to limit such parking to clinical staff who need to travel between hospitals, and to staff whose shift work may not be

facilitated by public transport. The Review Group supports this approach, which applies also to at least some categories of visitors to the children's hospital.

Planning issues

The new children's hospital will require a very large building of about 108,000 square metres. Depending on its location and the size of the site available, the building height is likely to range between 5 and 10 storeys. To avoid a risk of a further refusal of planning permission, the relevant planning issues need to be fully addressed, particularly as the submission of an environmental impact statement and appropriate assessment for such major development is mandatory under EU and Irish law.

While An Bord Pleanála is not bound by the provisions of the local development plan in determining a strategic infrastructure application, it will have regard to objectives relating to zoning, development control standards (such as density and height), protection of the built and natural environment etc. as representing good planning practice. We have identified the following planning issues, *inter alia*:

- if the children's hospital (and possibly a new maternity hospital also) is to be built on the campus of an existing hospital, the zoning will normally facilitate further similar development
- average urban plot ratios (which indicate the amount of floorspace that can be built on a given site without causing problems of overlooking, overshadowing, etc.) would suggest the need for a site area of at least 5 – 6 hectares to accommodate about 165,000 sq metres (including expansion space) estimated to be required for both new children's and maternity hospitals
- if the relevant development plan facilitates buildings significantly higher than 4 – 5 storeys, for example in certain inner city or town centre locations, a smaller site area may be feasible
- on any site the impact of tall and/or bulky buildings on the amenities of neighbouring houses, and the visual impact on historic buildings and vistas, needs to be carefully assessed, as shown by the reasons for refusal on the Mater site
- the amount of parking to be provided on site will depend on a range of factors, including how well the site is served by public transport, and the capacity of the surrounding road network to accommodate the additional traffic without causing significant congestion

- how the parking is to be provided will depend on the size and location of the site: deep basement car parking required on small sites is expensive to construct, while surface car parks on extensive sites are wasteful of land and may require long walks to the hospital
- the planning history of the potential site may be relevant, particularly if there is a recent but unused permission for development of a similar landuse or quantum. Such a permission may serve to indicate the acceptability from a planning viewpoint of further hospital development, building heights, traffic impact, etc.

Design issues

We have identified the following key design issues.

Internal layout

A great deal of preparatory work (such as the high-level framework prepared by RKW architectural consultants) has been done since 2006 in designing the capacity and internal layout of the children's hospital, e.g. what functions have to be close to each other, the need for single bedrooms, etc. This design work has also been the subject of considerable consultation with staff and patient representatives. It is our understanding that should the Minister and the Government choose a site other than the Mater, much of this work may be transferable.

The Youth Advisory Council, representing young patients, which has been part of the consultation process referred to above, outlined to us the importance of:

- Single rooms, with a pleasant outlook
- A spacious and welcoming entrance concourse, with 24/7 shops and cafés
- Age-appropriate play spaces and meeting rooms
- Bright and cheerful décor throughout
- Rooms and amenity spaces where parents can relax when not with their sick children.

Child-friendly design

International best practice – including the design of the new Alder Hey Children's Hospital in Liverpool – indicates that child patients place a high value on an attractive, landscaped setting (<http://www.youtube.com/watch?v=iyCOAhVQ7KI>). There is some academic research which points to better healthcare outcomes in such cases, although it is important

to note that the improvement is not comparable with that resulting from the scale of activity and range of sub-specialties which can be achieved in a major children's hospital.

Nonetheless, if a parkland setting for the children's hospital is not possible on a given site, there is much that can be done through the creation of garden spaces at lower levels or by means of enclosed green spaces at higher levels. Some of the gardens should be designed as play spaces, while others can provide visual amenity as seen from wards and public rooms in the hospital.

Capacity for expansion

The new hospital will have a design life of 50-100 years. Huge changes in clinical practice, technology, and patient demand will occur over such a long period, so it is vital that the design of the hospital allows it to change and grow. While some expansion capacity will be provided elsewhere in the healthcare system – in regional hospitals and urgent care centres, for example – best practice indicates that at least 20% capacity should be provided on or adjoining the site. There are a number of ways of achieving this:

- The building can be designed to be extended outwards or upwards, subject to future planning permission
- Lateral capacity is more beneficial, as adding floors is more expensive and creates operational problems for the hospital
- The site may be large enough to accommodate numerous additional buildings
- Vacant buildings or sites may be available in the immediate vicinity, which are suitable for ancillary uses which are not required to be located on the site
- It is also assumed that the proposals would be future proofed and have the capacity for an increase in capacity and usage and the ability to physically expand if the need arose.

Costs

The Review Group sought costings for each proposal supported by a Dublin Academic Teaching Hospital. Apart from the NPHDB which has been working on the project for some time and which has had the benefit of a detailed knowledge of the proposed building, the indicative costs received from the other groups were prepared in a short time-frame and based on concept designs comprising little more than block plans and using rates per square metre taken from published industry cost bands (generally between €2,000 and €2,600 per square metre). Some adopted a conservative approach while others were more optimistic. It serves little purpose, therefore, to take these figures as a basis for like-for-like comparisons between the proposals. We therefore sought to assess in broad terms whether costs are likely to be higher or lower on the potential alternative sites, having regard to location, size and shape and also make some estimate of the order of magnitude of such variations.

Urban versus greenfield sites

For the purposes of this exercise, a comparison was made between a 10 storey hospital building of 100,000 square metres with multiple basement carpark and plant spaces on a tight urban site, and a similar sized building on a large greenfield site with an average height of five storeys above ground. (A copy of the study is included at Appendix 4). The size of the site will influence the design of the building and the time required to construct it, which in turn will affect the cost. In the case of the urban site, the floor layout will be more compact with less horizontal travel distances, stairs and lifts, albeit serving more floors. On the other hand, the structure, facades and building services are likely to be more expensive.

Overall, the difficulties of building taller buildings on a tight urban site have a significant cost implication, which is estimated to be in the order of 10% more than a building of this size on a greenfield site.

There are also significant differences between the cost of providing car-parking in multiple basements as opposed to surface parking or multi-storey carparks above ground. The following is the indicative cost of providing car-parking alternative formats.

Type of car-park	Indicative cost per car space	Indicative cost for 1000 car spaces
Surface	€2,000	€2,000,000
Multistorey	€5,000	€5,000,000
Multi-basement level	€35,000	€35,000,000

The combination of surface and multi-storey car-parking that is likely to be adopted in greenfield sites is likely to result in a further saving in the order of 10% to 15% of the overall construction cost when compared to a tight urban site.

Site costs

All of the subject sites with the exception of the Coombe Hospital's proposal and Beaumont's Belcamp proposal are in the ownership of public bodies and are understood to be available at no cost other than the actual cost of conveyancing from one State agency to another. In the case of the Coombe Hospital, it is understood that part of the site is in the ownership of Dublin City Council while another part is owned by a property company which is under the control of NAMA. This site will require due diligence which may give rise to conveyancing issues resulting in some cost and time. The lands at Belcamp are also under the control of NAMA.

Site clearance and decanting

Decanting and replacement of existing buildings on the sites of the proposed new children's hospital is a significant issue in the case of Beaumont, St James's and to a lesser extent on the Mater site. Existing buildings will require demolition and the site will require to be cleared of debris. Some replacement buildings will be required on all of the sites, as will the diversion of underground services. Demolition and clearance of existing single storey buildings is required on the Coombe Hospital extended site, along with the removal of some contaminated soil and underground services. For the Tallaght Hospital and Connolly Hospital proposals, the sites are substantially free of existing buildings and services.

Other costs

Planning and services connections and other external costs are likely to be broadly similar across all of the options. Professional fees for design and preparation of tender documentation are likely to be of the order of 5% of the construction cost, while VAT will be of the order of 13.5% of the construction cost. These figures will therefore vary in accordance with the cost of the basic building.

ICT costs

The cost of providing a computerised patient management system that is fully integrated and linked to urgent care centre(s) is not included in the current model of costs for this project. Instead it is seen as a service that is the responsibility of the HSE and will come under their budget. In our view this presents a significant risk to the project and every effort should be made to include the technology as part of the service.

Risk and inflation

A provision for risk and inflation should be applied at the same rate to all projects.

Sunk costs of existing development at the Mater site

It is estimated by the NPHDB that only 20% of the costs incurred to date on the Mater site are recoverable which they estimate would lead to a write-off of €24m. This appears to be on the basis that such infrastructural works and service connections that have been completed would not be used, in the event of a new children's hospital being constructed elsewhere. In that event, the installations will be available for use for any other building that may be built on the site.

Sustainability and lifecycle cost

The design and location of the new hospital should have regard to the life cycle cost of the building in addition to the initial capital cost. The building should be energy efficient and require low maintenance and running costs. Floor space should be arranged in large regular blocks with large spans and adequate space for building services. The flexibility to change the internal layout and use of the building will ensure its sustainability into the future.

Operational savings

The operational savings achieved should be both clinical and in shared services. The shared infrastructure that will exist in a co- or tri-location will also bring ongoing infrastructural synergy and in ongoing costs in such areas as Central Sterile Supplies Department, waste management etc.

Our terms of reference require us to have regard to the likely timelines associated with the different options.

Once a site has been selected, the various components of the project timeline are as follows (some can run in parallel – see below):

- 1) Site acquisition, if required
- 2) Procurement of design team
- 3) Design development and preparation of planning application
- 4) Consideration of application by An Bord Pleanála

If permission is granted:

- 5) Procurement of construction contractors
- 6) Demolition/decanting of existing buildings, if required
- 7) Construction of new hospital
- 8) Commissioning of new hospital

1) Site acquisition, if required

Should the Government opt to purchase a greenfield site, the appropriate procurement process will apply and it is estimated this would take at least six months to complete.

2) Procurement of design team

In the case of the Mater site, the design team is already in place. In all other cases, a public procurement process will be required, taking about three months.

3) Design development and preparation of planning application

In all cases it is assumed that design development and the preparation of a planning application will run concurrently. In the case of the Mater site, substantial design work has already been carried out, including a revised design which seeks to address the reasons for refusal of planning permission for the original design in February 2012. The design development and planning application process could probably be completed in about four months.

In all cases other than the Mater site, it will be necessary to review the brief and prepare a development control plan, preliminary and developed designs. Assuming a significant part of the preliminary work done on the schedules of accommodation and adjacencies prepared for the Mater hospital site would still apply to any alternative site, it is estimated that nine months would be required.

4) Consideration of application by An Bord Pleanála

The time required to consider an application for strategic infrastructure development is solely a matter for the Board. However, based on the experience of the previous application on the Mater site, around six months should be allowed for the planning process.

Assuming planning permission is granted:

5) Selection of contractors, preparation of tender documents and obtaining tenders

These stages can run in parallel, and about 14 months (11 months in the case of the Mater site) should be allowed. This period also allows for ancillary certification, such as fire safety and disability access.

6) Demolition/decanting of existing buildings, if required

The longest delay would arise in the case of Beaumont Hospital, where planning permission would be required for a new multi-storey car park to replace the existing car park which would have to be demolished. The new car park would have to be completed before construction work could start on the children's hospital. Assuming no planning appeal, this would take at least 20 months. Lesser amounts of demolition or decanting would be required on the St. James's site for which planning permission has been granted. Demolition and decanting remain to be completed on the Mater site, including the 1861 courtyard buildings. The Coombe site requires demolition of mostly existing single storey buildings (for which planning permission has already been granted) and no decanting. There is no demolition involved on the Connolly or Tallaght Hospital sites for the children's hospital (demolition and decanting would be required in relation to the proposed maternity hospital at Tallaght, but it is assumed that the children's hospital would proceed initially.) As Belcamp is a greenfield site, no demolition or decanting is required.

7) Construction of the new hospital

Urban sites may require deep basements for underground car parks, and existing underground services may need to be rerouted. Because of limitations on access, site storage, material handling and restrictions imposed by the potential effect of dust, noise and other disruption on adjoining uses (especially so in the case of existing working hospitals immediately adjoining the site), construction is more difficult on an urban site. The design and structure of multi-storey buildings with multiple basements also dictates that they be constructed in sequence starting from the bottom basement level. No part of the structure of one floor can be started until the corresponding part of the preceding floor is complete. While repetitive floors can lead to some economies, every delay during the construction of the basic structural shell is critical to the overall programme. Tall buildings in urban sites are more susceptible to wind conditions which affect cranes with restricted operational arcs. Limitations on working times may make it difficult to make up lost time.

Conversely, the ability to work with significantly less constraints on a greenfield site makes for a quicker start to the works and also provides a better chance to maintain the programme throughout the project. It also facilitates phased opening of separate buildings.

Some of the timelines that have been received from the major hospitals are considered to be unrealistic in indicating construction periods of two years or less. Given the scale and complexity of the building it is estimated that it will take at least three to three and a half years to construct on a relatively clear urban site. Reflecting the several practical advantages in terms of relative ease of construction that a greenfield site has, it is estimated that it could be constructed in a period which is 6 months less than an urban site.

8) Commissioning of the new hospital

The installation and testing of hospital fittings and equipment can partly overlap with the final phase of the construction process, but about four to five months following completion of construction is normally required before the hospital becomes operational.

Previous chapters have set out the broad range of issues specified in our Terms of Reference. Based on that analysis, this chapter identifies the important principles which we recommend should guide the selection of a location for the new children's hospital, and which we have adopted in assessing the strengths and weaknesses of the sites submitted for our consideration.

Best clinical practice

- Co-location with an adult hospital is necessary in our view, and tri-location is optimal.
- There is no adult hospital which offers the entire range of subspecialist services to complement the needs of the new children's hospital, but it is important that the selected co-located adult hospital offers the best opportunities for improving health outcomes for children from the island of Ireland for the next 100 years.
- Therefore, we have only considered in detail those sites which can offer co-location with an adult teaching hospital immediately, and which (the Coombe, which is a maternity hospital, excepted) have the potential to accommodate a new maternity hospital as soon as funds permit. In our view, other sites are sub-optimal in terms of potential best health outcomes for sick children and at-risk mothers.

Research and education

- It is crucial to both the success of the new hospital and of children's healthcare in Ireland that it should deliver excellence in training, should have adequate space within the core of the hospital to accommodate both research and education facilities, and that there should be on-site capacity for future expansion, to meet changing needs and new technology.

Access

- As about three-quarters of patients will come from the Dublin area – both inside and outside the M50 – we agree with the McKinsey *Children's Health First* report from that the hospital should be located in Dublin. We have not considered in detail sites outside the area for that reason.

- There will be a need to provide adequate on-site parking for patients, parents, visitors and staff at the new hospital; a minimum of around 1,000 spaces is likely to be required, perhaps more if not supplemented by good public transport services.
- A balance needs to be struck between the need to provide parking and the capacity of the adjoining road network to accommodate the approximately 10,000 daily trips likely to be generated by the hospital (not all of which will be by car).
- A site which benefits from good public transport should be prioritised over one which is largely car-dependent.
- A helipad should be provided within the hospital campus for air ambulance transfers, preferably at ground level.

Planning and design

- To minimise the risk of a further refusal of planning permission, the site should be large enough to accommodate a bulky and tall building without causing adverse impacts on the immediate surroundings or the skyline, and should comply with relevant development plan/local area plan objectives and standards. As stated earlier, this is likely to be at least 5-6 hectares, unless the relevant development plan facilitates buildings significantly higher than 4-5 storeys.
- The site should also be large enough to facilitate future hospital and research expansion (a minimum of about 20% is recommended).
- Ideally, the site should be large enough to provide a pleasant parkland setting; if this is not feasible, a range of amenity and play spaces should be provided at lower levels and enclosed “winter gardens” at higher levels.

Cost

- Having regard to the current state of the public finances, it is imperative that value for money be achieved in delivering the children’s hospital, by minimising both the capital and operational costs.
- Where the site is in public ownership, no acquisition cost is involved.
- Significant ongoing operational savings will be achieved by combining the three existing children’s hospitals on one site; additional savings will accrue through co-location with an adult hospital (or tri-location with a maternity hospital). While such

savings are not dependent on location, the larger the co-located hospital, the greater should be the scope for efficiencies of scale.

Programme delivery

- Having regard to delays which have already taken place, it is imperative for the sake of sick children and their families that the new hospital be delivered as quickly as possible.
- However, while any avoidable delay should be minimised, it is more important to choose the right site which meets essential criteria over the long-term (say 50 – 100 years) than one which is merely the fastest in the short-term. This approach has been endorsed by patients, parents, and health professionals who met us.

Part 3
Assessments and recommendations

Sites offered free

The site offers received are identified on the map (Figure 2). The following sites were offered free of charge and we wish to acknowledge the generosity of these landowners.

- Site of c.15-20 acres, Newlands/ Belgard Road, adjacent to the M50 and the Naas Rd, offered by Mr Philip Browne, IRFU **(6)**
- Site of c.8 acres at the west end of the former Phoenix Park Racecourse, offered by Noel O Flaherty, Flynn & O Flaherty **(12)**
- Site of area within c. 200 acres, adjacent to Dublin Airport at Merryfalls/Silloge offered by Mr Frank Connon **(22)**
- Site adjacent to the M50 and Dublin Airport, offered by Mr Philip Maguire, Ballymun Regeneration Ltd, Ballymun **(23)**

Other unsolicited offers

The following offers were also received. Those that are within the Dublin area are numbered on the map (Figure 2).

- Site of number 75, 76 & 77 Eccles Street , private property offered by Mr John McGovern **(1)**
- Site of c.1.45 acres, Dorset Street, Dublin 1 offered by Mr Adrian Langan, Barina Construction Ltd **(2)**
- Site of c. 8 acres at Heuston South Quarter, adjacent Royal Hospital Kilmainham offered by Ronan Webster, Green Property Ventures **(3)**
- Site of c.10.51 acres, adjacent Tallaght Hospital offered by Mr Philip Harvey, William Harvey & Co. for Allied Foods **(5)**
- Site of c. 32.5 acres, at Naas Rd, adjacent to Newlands Cross offered by Mr Noel Smyth, Alburn **(7)**
- Site of c.15 acres N7, adjacent Red Cow Luas Stop offered by Mr Gregory Alken, Brunello Developments Ltd **(8)**

- Site of c. 24 acres, at Naas Road, Dublin 12 adjacent to Luas and M50 offered by Mr Robert Harris, Harris Group **(9)**
- Site of c.14.5 acres, Monastery Road, Clondalkin offered by Mr Finn Lyden, SIAC Group **(10)**
- Site of c. 7 hectares at Adamstown, Co Dublin offered by Mr Hugh O'Neill, Castlethorn Construction **(11)**
- Site of c.26 acres, N3 Navan Rd offered by Mr William Hynes, Downey Hynes Partnership Ltd for Corner Park Group **(13)**
- Site of c. 100 acres, at The Ward, Coolquay, Dublin offered by Christopher O'Rourke Group for Mr Noel Browning **(15)**
- Site of c.80 acres, R135, New Park, The Ward offered by Mr Liam Miller for and on behalf of Mr Simon Rutledge **(16)**
- Site of c.50 acres, Lissenhall, Swords offered by Mr Francis M Whelan, Broadmeadow Healthcare Group **(17)**
- Site of c.11.19 acres, N1 Kettles Lane, Adjacent Dublin Airport offered by Kevin Fox, Property Team Auctioneers **(18)**
- Site of c. 14.8 acres at Mountgorry, Malahide, offered by Downey Hynes Partnership Ltd for MJS Properties **(19)**
- Site of c. 16.2 acres, Clonsaugh adjacent M50 & M1 offered by Mr John Swarbrigg, Savills Ireland **(20)**
- Site of c. 18 – 20 acres at Dardistown, Co Dublin (Metropark) offered for Mr Hugo Byrne **(21)**
- Site of c.6.75 acres at Swords Road, Dublin 9 offered by Mr Adrian Langan, Barina Construction Ltd **(24)**

Sites not within the Dublin area

- Site of c. 9.4 hectares, adjacent to new Tullamore Regional Hospital offered by Mr Dominic Doheny, John Flanagan Developments
- Site of c.120 acres, at Dunboyne, Co Meath offered by Mr Shay Scanlon, Architect on behalf of a client

- Site of c. 386 acres, at Kilcock, Co Kildare offered by Mr William J. Coonan, Coonan Real Estate Alliance & Knight Frank Ltd on behalf of the vendors
- Site of c.85 acres, Taghadoo, Maynooth, Co Kildare offered by Mr Will Coonan, Coonan Real Estate Alliance, on behalf of the vendors
- Site of c. 40.76 hectares, Robinstown, Mullingar offered by Mr Billy Coughlan, Westmeath County Council

Sites proposed by Fingal County Council

Fingal County Council proposed a number of possible sites within its area for the new children's hospital. These are listed below (some were also proposed by the landowners also or by hospitals).

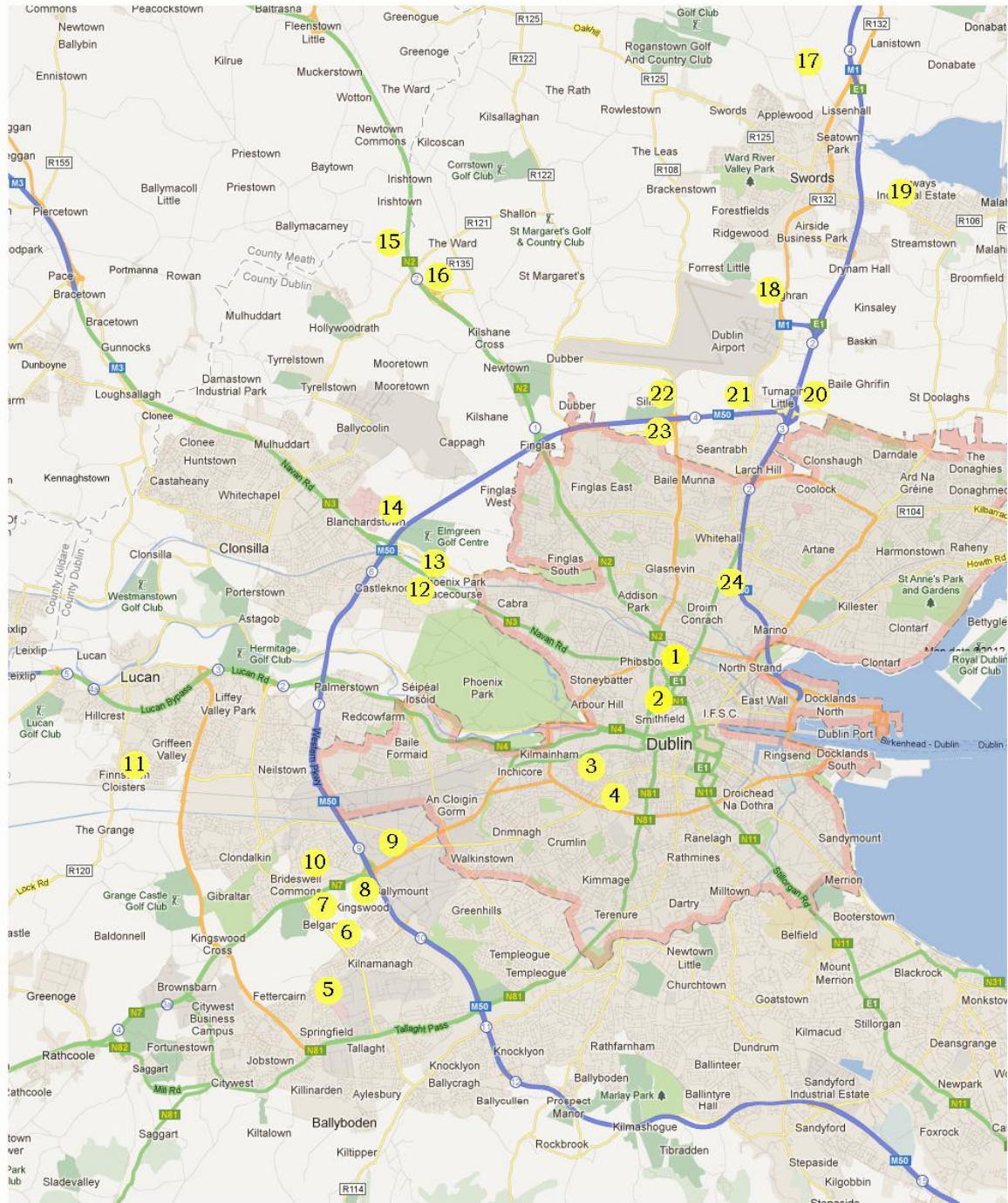
- c.21.8 hectares, Connolly Hospital/Abbotstown
- c.16.7 hectares, Phoenix Park Racecourse
- 5 hectares & 110 hectares, Cappagh Hospital & Dunsink
- c. 44.5 acres, Balcurris Ballymun
- c129 acres/52.5 hectares, Merryfalls, Sillogue
- c.139.4acres/56.4 hectares, 'MetroPark' Dardistown
- c.124 acres, Clonshaugh/ Belcamp
- c.122.6 acres, Belcamp
- c.50 acres, Lissenhall, Swords

Site in public ownership proposed

- A site on the lands of Sports Campus Ireland, adjacent to Connolly Hospital and the M50, which is publicly owned was proposed to be made available by Mr Leo Varadkar TD, Minister for Transport. These lands are part of the submission from Connolly Hospital. **(14)**

Figure 2

UNSOLICITED SITES IN THE GREATER DUBLIN AREA



Site areas proposed

Table 1 sets out for comparison the site areas in hectares proposed for the new children's hospital, a new maternity hospital and lateral expansion space where available, by the various adult hospitals which made submissions to us.

Table 1 Site areas proposed (hectares)

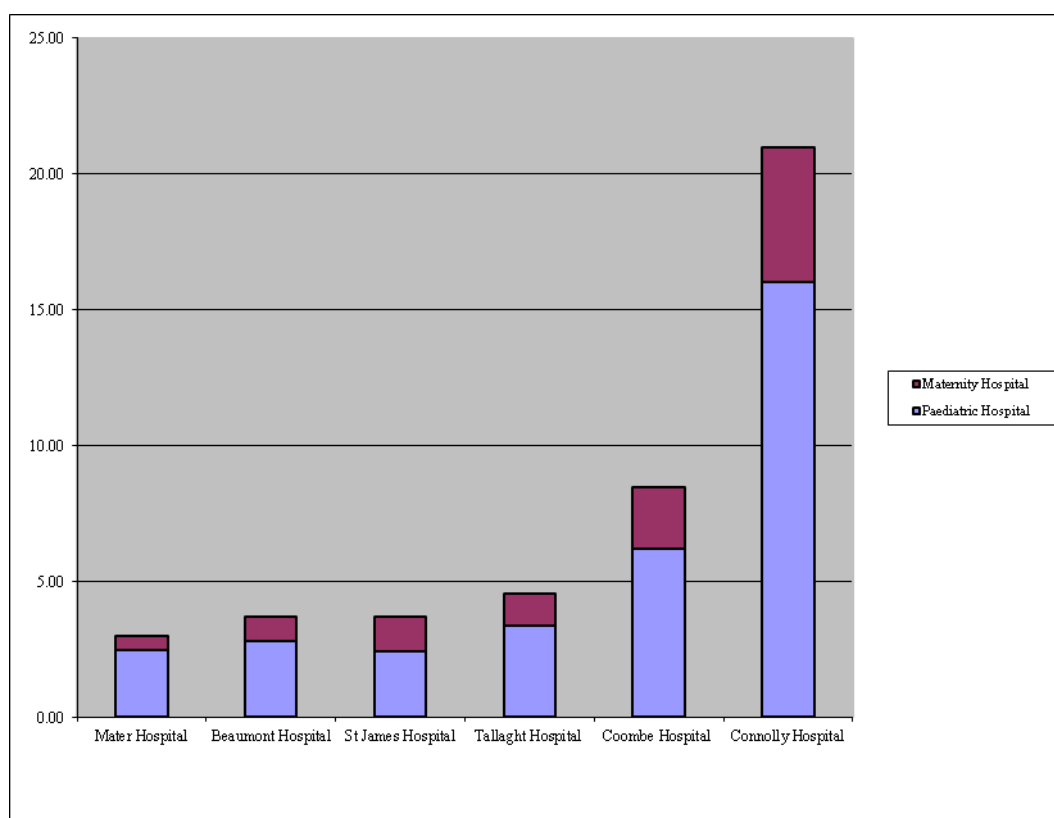
	Mater Hospital	Beaumont Hospital	St James Hospital	Tallaght Hospital	Coombe Hospital	Connolly Hospital
Paediatric Hospital	2.47	2.80	2.44	3.36	6.19	16.00
Maternity Hospital	0.53	0.90	1.26	1.18	2.30	5.00
Total	3.00	3.70	3.70	4.54	8.49	21.00
Lateral Expansion	0 ¹	0 ¹	2.6 ²	2.06 ⁴	0 ³	15.00

1: No significant expansion space outside the footprint of the building is provided at the Mater and Beaumont

2: The ambulance centre and part of the outpatients dept are proposed as expansion space by St James

3: Expansion space into St Teresa's Gardens is proposed at the Coombe Hospital but not defined.

4: Lateral expansion space at Tallaght is proposed on the surface car park area



Original proposal for the BEAUMONT HOSPITAL campus (April 2012)

Beaumont Hospital is located on the northside of Dublin, in Dublin 9. It is an adult teaching hospital providing a number of national specialties including neurosurgery.

Who has made the proposal?

The proposal has been made by Beaumont Hospital.

Children's hospital site proposed

The proposed site for the children's hospital is 2.8 hectares on the Beaumont Hospital campus near the entrance from Beaumont Road. Part of the proposed site is currently occupied by a multi-storey public car park and other buildings. A further 0.9 hectares has been identified for a future maternity hospital. The total site offered is 3.7 hectares.

Ownership of the site

The hospital campus, including the site, is owned by the Beaumont Hospital Board.

Key features

- The design outline proposes a hospital of 10 storeys in total, involving a 7 storey ward block over a 3 storey podium block. There would be little protected green space in the vicinity of the buildings.
- The existing multi-storey car park, the Irish Kidney Foundation building and a number of other buildings currently in use near the main entrance door to the hospital would need to be demolished and replaced elsewhere on the campus before construction of the new children's hospital could begin. In addition to existing car parking it is proposed to provide a further 1,500 spaces on two levels in the basement of the proposed children's hospital.
- The proposal offers co-location with an existing adult tertiary hospital, and future tri-location with a maternity hospital beside the children's hospital when constructed.



BEAUMONT HOSPITAL: assessment of strengths and weaknesses

Criteria	Strengths / opportunities	Weaknesses / risks
Co-located with adult teaching hospital	<ul style="list-style-type: none"> 820 bed hospital, largest hospital on Dublin's northside On site co-location Paediatric beds on site currently Space for maternity included 	
Critical mass of sub-specialist care	<ul style="list-style-type: none"> National specialties x 5 Some supra-regional specialties Radiation oncology on site 	
Opportunities for transitional adolescent service	<ul style="list-style-type: none"> Some established protocol-based transition programmes in place Further transitional synergy with other core sub-specialties could be established 	
Extent of consultant linkages with Dublin children's hospitals	<ul style="list-style-type: none"> Significant 	
Depth and breadth of clinical and academic research	<ul style="list-style-type: none"> Smurfit Clinical Research Centre, including neuroscience, vascular biology and respiratory Wellcome Trust / HRB Centre for Clinical Research (spoke in hub-and-spoke model) 	
Site suitability	<ul style="list-style-type: none"> In public ownership 	<ul style="list-style-type: none"> Very restricted site
Access	<ul style="list-style-type: none"> 4k from M50 Access to four bus routes 	<ul style="list-style-type: none"> Limited public transport Congested local road access
Planning and design	<ul style="list-style-type: none"> Site zoned for hospital use 	<ul style="list-style-type: none"> Height and mass of proposed building on limited site likely to be problematic in suburban context Number of car-parking spaces may have traffic implications outside the site.
Project delivery / timelines		<ul style="list-style-type: none"> Significant preparatory demolition and rebuild required before construction can begin resulting in time delay Restricted site for construction
Value for money		<ul style="list-style-type: none"> Significant loss of value in demolishing relatively new and viable existing buildings

Alternative proposal by BEAUMONT HOSPITAL for a site at Belcamp (May 2012)

Who has made the proposal?

This alternative greenfield proposal has been made by Beaumont Hospital, supported by the Royal College of Surgeons in Ireland.

Site proposed

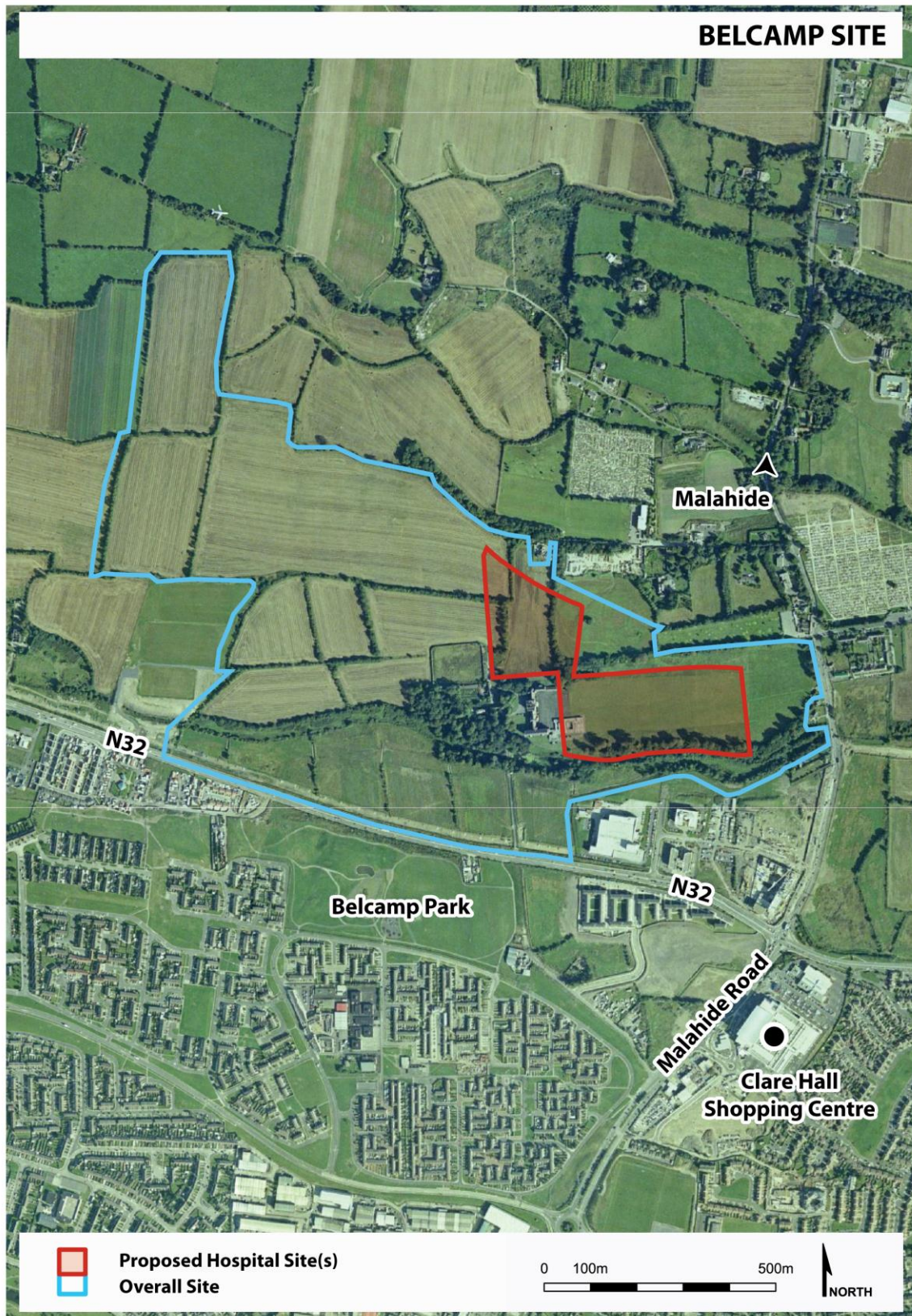
The proposed site for the new children's hospital is 7.25 hectares, with a further 3.4 hectares for a new maternity hospital. The total site proposed is c. 32 hectares.

Ownership of the site

The site is privately owned and is currently under the control of NAMA.

Key features

- No design outline has been provided but the concept outlined is that of a landscaped parkland setting.
- Two or three multi-storey car parks, with capacity for over 2,000 spaces, are proposed to serve the campus.
- The proposal is for future tri-location with a new Beaumont hospital (to be redeveloped at Belcamp at some future date) and a maternity hospital, when constructed.
- The site offers ample space for future expansion.
- The Royal College of Surgeons in Ireland has proposed a medical/biotechnology Research and Development cluster on the Belcamp campus.



BEAUMONT-BELCAMP: assessment of the alternative proposal

This alternative proposal, which was submitted by Beaumont Hospital in conjunction with the Royal College of Surgeons in Ireland (RCSI), presents a proposal for the tri-location of the new children's hospital with a new maternity hospital and a general adult hospital, in association with a health sciences, education and research campus on the Belcamp site.

The proposal envisages the relocation of Beaumont Hospital onto the Belcamp site by 2021, following the completion of the new children's hospital and the maternity hospital. On review of the information provided and the presentation given, we consider that while the Belcamp proposal involves co-location, this is currently aspirational and outside the control of the proposers.

In relation to the suitability of the site itself, a preliminary assessment was done which identified a number of weaknesses:

- part of the site is within the Dublin Airport outer noise zone, as indicated on the Fingal County Development Plan, making it relatively unattractive as a site for a children's hospital
- the site is poorly served by public transport when compared with any of the other potential urban or suburban hospital sites
- neither Beaumont Hospital nor the RCSI has a legal interest in the site, which is under the control of NAMA and which has not been offered for sale by its owner(s)
- it is likely that any planning application for proposed development at Belcamp would have to await the preparation and adoption of a Local Area Plan by Fingal County Council.

Proposal for the CONNOLLY HOSPITAL campus area

Connolly Hospital is an adult teaching hospital located at Blanchardstown, Dublin 15 near the junction of the N3 and M50.

Who has made the proposal?

The proposal is made jointly by Connolly Hospital and Fingal County Council. It should be noted Beaumont Hospital and Connolly Hospital propose to merge into one hospital on two sites and, together with RCSI, form an Academic Health Centre. Beaumont Hospital (should its own proposal not be accepted) and RCSI have indicated their support for the proposal.

Children's hospital site proposed

A site of 16 hectares is proposed for the children's hospital out of a total site of 36 hectares which is adjoining the existing hospital campus. The remaining 20 hectares is available for a new maternity hospital, other developments if necessary and parkland.

Ownership of the site

The 36 hectare site is in the ownership of National Sports Campus Development Authority and is publicly owned.

Key features

- The proposal is for a hospital within developed parklands and natural amenity lands.
- The outline design is for a relatively low-rise building (3 to 5 storeys), consisting of pavilions set in a landscaped area extending from a central core, with 3 fingers separated by parkland and buildings having internal courtyards.
- Car parking capacity can be provided on the site in surface and multi-storey car parking to whatever quantum is required.

The proposal offers co-location with an adult secondary hospital and future tri-location with a maternity hospital.



CONNOLLY HOSPITAL: assessment of strengths and weaknesses

Criteria	Strengths / opportunities	Weaknesses / risks
Co-located with adult teaching hospital	<ul style="list-style-type: none"> • 400 beds • On site co-location • Space for maternity hospital 	
Extent of relevant adult specialities	<ul style="list-style-type: none"> • Secondary hospital • 58 consultants 	
Opportunities for transitional adolescent service	<ul style="list-style-type: none"> • Transitional synergy with core specialties to be established. 	
Extent of consultant linkages with Dublin children's hospitals		<ul style="list-style-type: none"> • None
Depth and breadth of clinical and academic research	<ul style="list-style-type: none"> • RCSI teaching centre • Member of Academic Health Centre with Beaumont and RCSI • Wellcome Trust / HRB Centre for Clinical Research (spoke in hub-and-spoke model) and Smurfit Centre on Beaumont site 	
Site suitability	<ul style="list-style-type: none"> • Co-located parkland hospital opportunity • In public ownership • Extensive expansion potential • Proximate to National Aquatic and Sports Centre 	
Access	<ul style="list-style-type: none"> • Motorway slipway access. • No parking restrictions. • Bus services x 12 – 2 on site • Walking distance from Castleknock train station • Helipad at ground level possible 	
Planning and design	<ul style="list-style-type: none"> • Capable of low rise design in parkland setting • Planning not envisaged to be problematic 	<ul style="list-style-type: none"> • Development Plan Variation required but has the support of Fingal County Council
Project delivery / time	<ul style="list-style-type: none"> • Ease and speed of construction • Can be opened on a phased basis 	
Value for money	<ul style="list-style-type: none"> • Greenfield status • Minimal basement requirement • No site acquisition costs 	

Proposal for the COOMBE HOSPITAL campus area

The Coombe Women and Infants University Hospital is one of the three maternity hospitals in Dublin and is located in the south inner city.

Who has made the proposal?

The Coombe Women and Infants University Hospital has made a submission to the Review Group. St James's Hospital has indicated its support for the Coombe proposal in the event that its own proposal is not accepted.

Children's hospital site proposed

A site of 6.2 hectares is proposed for the new children's hospital, adjacent to the existing Coombe hospital.

Ownership of the site

The proposed site is in the ownership of Dublin City Council (1.9 hectares) and Players Square Ltd (4.3 hectares in total in two plots). The Players Square lands are under the control of NAMA.

Key features

- A 7-storey building is proposed, in a landscaped setting.
- 1,500 carparking spaces are proposed for the site in a two-storey basement carpark.
- The proposal is for immediate tri-location of paediatric, maternity and adult services, involving the existing Coombe hospital, the new National Paediatric Hospital and St James's Hospital which is approximately 600m away.
- The proposal includes the replacement at some future date of the existing maternity hospital with a new maternity hospital, partially on adjacent lands (possibly those owned by Dublin City Council, subject to agreement).



COOMBE HOSPITAL: assessment of strengths and weaknesses

Criteria	Strengths / opportunities	Weaknesses / risks
Co-located with adult teaching hospital	<ul style="list-style-type: none"> Immediate tri-location with adult (walking distance) and existing maternity hospital (corridor linkage) 	<ul style="list-style-type: none"> 8 minute uncovered walk currently crossing busy street
Critical mass of sub-specialist care	<ul style="list-style-type: none"> National specialties x 12 Many supra-regional specialties Radiation oncology Irish Blood Transfusion Service Cryobiology Storage Facility(EUTCD) <i>All based on SJH campus</i> 	
Opportunities for transitional adolescent service	<ul style="list-style-type: none"> At SJH there are a number of established protocol-based transition programmes in place. 	
Extent of consultant linkages with Dublin children's hospitals	<ul style="list-style-type: none"> SJH linkages significant, plus neonatologists at Coombe 	
Depth and breadth of clinical and academic research	<ul style="list-style-type: none"> Institute of Molecular Medicine, Wellcome Trust / HRB Clinical Centre for Clinical Research (<i>hub in hub-and-spoke model</i>), Centre for Advanced Medical Imaging (CAMI) Mercer's Institute of Research on Ageing Institute for Cardiovascular Sciences Research CT facility <i>All based on SJH campus</i> European Research Laboratory (Coombe) Potential for Quest Diagnostics Laboratory (Coombe) 	
Site suitability	<ul style="list-style-type: none"> Largest urban site of those proposed. Relatively clear site with substantial greenfield element. Instant maternity hospital co-location at no cost. Corridor linkage possible 	
Access	<ul style="list-style-type: none"> Possible multiple access locations Good public transport - 8 minutes from Luas (Fatima). Good access for cars and construction traffic QBCs on Cork Street and SCR, 5 bus routes 	
Planning and design	<ul style="list-style-type: none"> 8 storey buildings approved in previous planning permission Good community support Scope for some soft landscaping at lower levels 	
Project delivery / timelines	<ul style="list-style-type: none"> Relatively clear site 	<ul style="list-style-type: none"> Site has to be acquired from

	<ul style="list-style-type: none"> • Good space for construction. 	multiple owners
Value for money	<ul style="list-style-type: none"> • Continuation of use of existing maternity hospital. • Least costly urban solution 	<ul style="list-style-type: none"> • Site acquisition cost

Proposal for the MATER HOSPITAL campus

The Mater Misericordiae University Hospital is located in the north inner city. It is an adult teaching hospital providing a number of national specialties.

Who has made the proposal?

The National Paediatric Hospital Development Board, which was established in 2007 to develop the paediatric hospital on the Mater campus, has made a submission to the Review Group which outlines its proposed redesign for the hospital following the rejection of the planning application by An Bord Pleanála in February 2012.

The Mater Hospital, Rotunda Hospital and Children's University Hospital Temple Street have come together to make a separate submission to the Review Group supporting the Mater site, highlighting their synergies and presenting an alternative cost structure.

Children's hospital site proposed

The site proposed for the children's hospital is 2.47 hectares which includes the 1861 Mater Hospital building, a protected structure. A further 0.53 hectares is offered for a future maternity hospital to replace the existing Rotunda hospital. The total site available is 3 hectares.

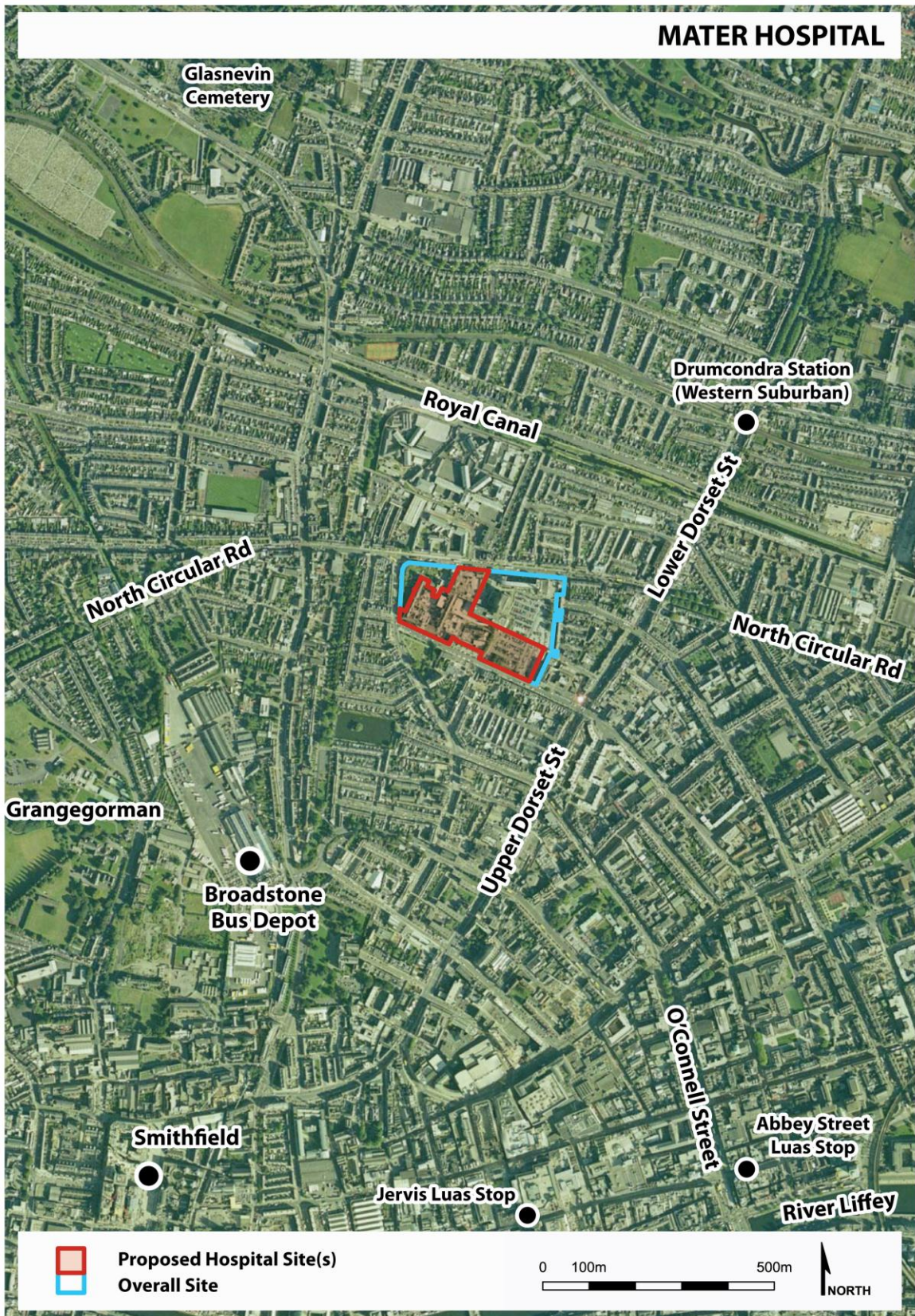
Ownership of the site

The original site area of 2.04 ha has been ceded to the State by the Sisters of Mercy for the purpose of building a children's hospital. The additional space has been offered by the Sisters of Mercy on a long lease with nominal rent.

Key features

- The site now proposed for the National Paediatric Hospital is the original site plus the 1861 Mater Hospital building which is proposed to accommodate research and education.
- An outline redesign has been presented to the Review Group which would be lower than the original building design. There would be 4 storeys fronting on to Eccles Street, rising to 9 storeys in the main building behind, which is broadly comparable with the new Mater adult hospital.

- There are no ground-level green spaces available to the children's hospital but winter gardens (i.e enclosed gardens) at upper floors would be incorporated.
- Planned car parking on site is for approximately 1,416 cars, with 444 serving the adult hospital and 972 for the new children's hospital
- The proposal offers co-location with an adult tertiary hospital, and future tri-location with a maternity hospital when constructed. The present Rotunda Hospital is 1.4km from the Mater campus.
- The National Paediatric Hospital Development Board considers that the revised design could save about €20m on the capital cost of the project. However, the Mater / Rotunda / CUH Temple Street hospital group believes that significant further savings could be achieved.



MATER CAMPUS: assessment of strengths and weaknesses

Criteria	Strengths / opportunities	Weaknesses / risks
Co-located with adult teaching hospital	<ul style="list-style-type: none"> • 600 beds • On site co-location • Corridor linkage • Space for maternity hospital 	
Extent of relevant adult specialties	<ul style="list-style-type: none"> • National specialties x 6 • Some supra-regional specialties 	
Opportunities for transitional adolescent service	<ul style="list-style-type: none"> • Established protocol-based transition programmes in place. • Further transitional synergy with other core sub-specialties could be established. 	
Extent of consultant linkages with Dublin children's hospitals	<ul style="list-style-type: none"> • Significant 	
Depth and breadth of clinical and academic research	<ul style="list-style-type: none"> • Wellcome Trust/HRB I Centre for Clinical Research (spoke in hub-and-spoke model) • Institute of Radiological Science • Institute of Ophthalmology 	
Site suitability	<ul style="list-style-type: none"> • Part of site in public ownership (no acquisition cost) • Masterplan configuration complete 	<ul style="list-style-type: none"> • Very limited room for lateral expansion • High plot ratio and site coverage. • Capacity to accommodate maternity hospital yet to be demonstrated
Access	<ul style="list-style-type: none"> • City centre location • Parking capacity confirmed • Dedicated ambulance corridor • Optimum bus services • 10 minutes Drumcondra train station 	<ul style="list-style-type: none"> • Difficult traffic circulation pattern in vicinity
Planning and design	<ul style="list-style-type: none"> • Favourable zoning • Site cleared for construction • Compact co-location linkages 	<ul style="list-style-type: none"> • Sensitive location • High plot ratio & site coverage • Capacity for expansion limited • Time line and planning for maternity hospital yet to be demonstrated
Project delivery / timeline	<ul style="list-style-type: none"> • Substantial work done on revised design • Enabling works partially complete • NPHDB have project team in place 	<ul style="list-style-type: none"> • Very restricted site for construction
Value for money	<ul style="list-style-type: none"> • No acquisition cost • Cost of abandoning site estimated at €24m by NPHDB 	

Proposal for the ST JAMES'S HOSPITAL campus

St James Hospital is located in the south inner city. It is an adult tertiary hospital with a number of national specialties including the National Bone Marrow Transplant Unit and the National Centre for Hereditary Coagulation Disorders.

Who has made the proposal?

The submission is made by St James's Hospital. They are supported by Our Lady's Hospital, Crumlin, which has written to the Review Group in this regard. The Coombe hospital has indicated its support for the St James's proposal should its own proposal not be accepted.

Children's hospital site proposed

A site area of 2.44 hectares is proposed for the children's hospital. A further 1.26 hectares is proposed for a future maternity hospital. The total site area, including expansion, is 6.3 hectares.

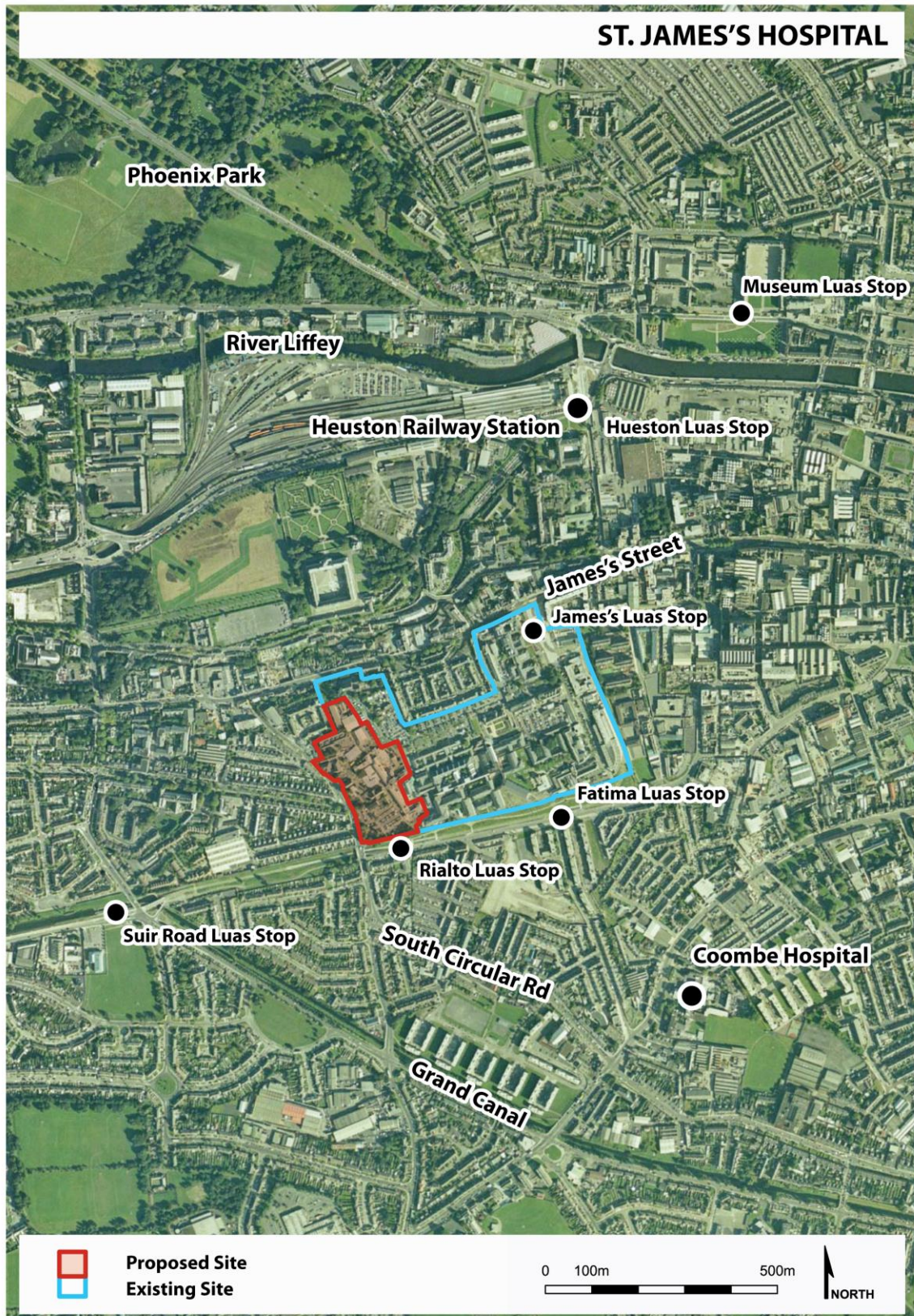
Ownership of the site

The site is leased on a long lease by the St James's Hospital Board, with the freehold in the ownership of the HSE. St James's Hospital has been advised that, should the hospital be chosen as the site for the new children's hospital, a recommendation would be made to Dublin City Council for the disposal of the appropriate portion of the linear park along St James's Walk on the southern side of the hospital site to St James's Hospital.

Key features

- The outline design is for a building rising from 3 storeys on the western side of the site to 9 storeys on the eastern side.
- The design includes green spaces at ground level between "finger" blocks and at third floor roof level and winter (enclosed) gardens beside the wards at higher levels.
- There is limited open space in the immediate campus (see above regarding the linear park owned by Dublin City Council).
- Planned carparking on site is for 1,500 basement parking spaces over three levels for both the proposed children's and maternity hospitals. Some existing staff parking within the hospital campus would be relocated off-site.

- The proposal is for co-location with an adult tertiary hospital, and with space to develop a new maternity hospital to offer future tri-location. The Coombe hospital is 850m away from the proposed site for the children's hospital (600m from the proposed entrance to St James's at the LUAS Fatima stop).
- There are a number of low-utility buildings on the proposed children's hospital site. Planning permission has been granted for their demolition.



ST JAMES'S HOSPITAL: assessment of strengths and weaknesses

Criteria	Strengths / opportunities	Weaknesses / risks
Co-located with adult teaching hospital.	<ul style="list-style-type: none"> 1020 beds, largest hospital in the state Space available for a new maternity hospital on the SJH campus 	
Critical mass of sub-specialist care	<ul style="list-style-type: none"> National specialties x 12 Many supra-regional specialties Radiation oncology on site Irish Blood Transfusion Service on site Cryobiology Storage Facility(EUTCD) on site 	
Extent of consultant linkages with Dublin children's hospitals	<ul style="list-style-type: none"> Significant 	
Opportunities for transitional adolescent service	<ul style="list-style-type: none"> Many established protocol-based transition programmes in place Further transitional synergy with other core sub-specialties could be established 	
Depth and breadth of clinical and academic research	<ul style="list-style-type: none"> Institute of Molecular Medicine, Wellcome Trust / HRB Centre for Clinical Research (hub in hub-and-spoke model) Centre for Advanced Medical Imaging (CAMI) Mercer's Institute of Research on Ageing Institute for Cardiovascular Sciences Research CT facility 	
Site suitability	<ul style="list-style-type: none"> 6.3 hectares available including expansion space Entire site in public ownership 	<ul style="list-style-type: none"> New children's and maternity hospitals will consume most of capacity for expansion of adult hospital
Access	<ul style="list-style-type: none"> Excellent public transport services 4 bus services Luas stop on campus 2 others adjacent 	<ul style="list-style-type: none"> Risk of traffic congestion near the Rialto Gate
Planning and design	<ul style="list-style-type: none"> Favourable zoning Permission granted for demolition of existing buildings on proposed new children's hospital site New children's hospital site borders linear park along the LUAS line 	<ul style="list-style-type: none"> Capacity to accommodate height and bulk of the proposed new children's hospital building yet to be demonstrated notwithstanding current permission for private hospital on the site Overall proposed level of parking on the SJH campus likely to be an issue
Project delivery / timeline		<ul style="list-style-type: none"> Need to decant existing buildings/uses on proposed new children's hospital site could cause delays Difficult site to build on

Value for money	<ul style="list-style-type: none"> • No site acquisition cost • Potential for significant operational savings arising from co-location with large and well-managed adult hospital 	<ul style="list-style-type: none"> • Construction cost likely to be more expensive than on a greenfield site • Demolition and decanting costs
-----------------	---	---

Proposal for the TALLAGHT HOSPITAL campus area

Tallaght Hospital is an adult teaching hospital located at Tallaght in West Dublin.

Who has made the proposal?

The proposal is made jointly by Tallaght Hospital and South Dublin County Council.

Children's hospital site proposed

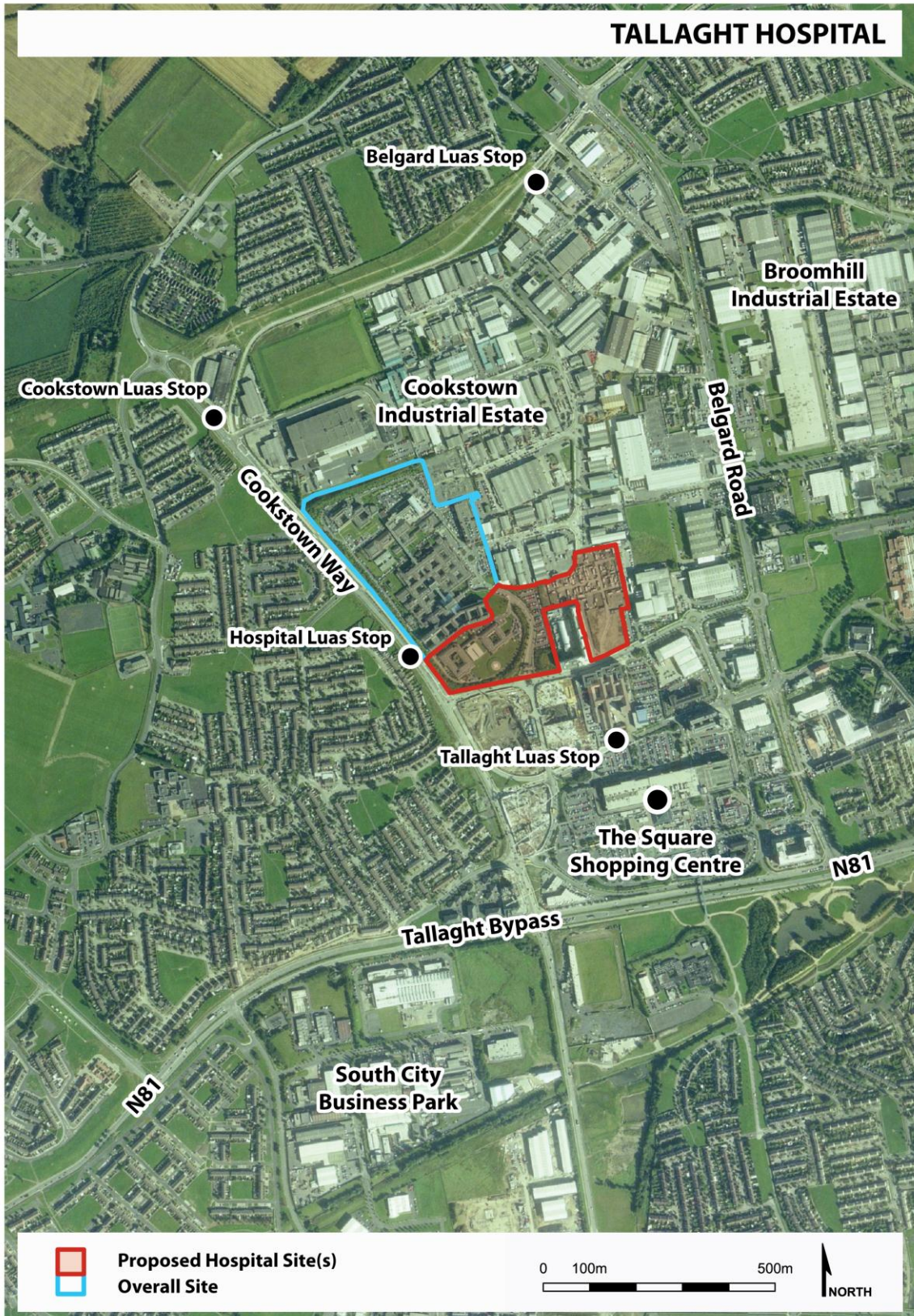
The proposed site for the children's hospital is 3.17 hectares. A further 1.18 hectares is proposed for the maternity hospital. The total site is 6.6 hectares including expansion space.

Ownership of the site

4.0 hectares is owned by Tallaght Hospital; the remaining 2.6 hectares is owned by South Dublin County Council.

Key features

- The site is centrally located within the town centre of Tallaght.
- An L-shaped building is proposed, rising to 9 storeys, incorporating a high atrium and winter garden with enclosed roof gardens.
- Up to 1,000 basement carparking spaces are proposed over two levels underneath the children's hospital.
- The proposal is for co-location with an adult teaching hospital, in a Tallaght Medical Quarter which could accommodate related research and biomedical clusters.



TALLAGHT HOSPITAL: assessment of strengths and weaknesses

Criteria	Strengths / opportunities	Weaknesses / risks
Co-located with adult teaching hospital	<ul style="list-style-type: none"> • 600 beds • On site co-location • Space for maternity hospital 	
Critical mass of sub-specialist care	<ul style="list-style-type: none"> • National Service x 1 • Some supra-regional specialties 	
Opportunities transitional adolescent service	<ul style="list-style-type: none"> • Few protocol-based transition programmes in place. • Further transitional synergy with other core sub-specialties could be established. 	
Depth and breadth of clinical and academic research	<ul style="list-style-type: none"> • Affiliated with Trinity Health Ireland 	
Site suitability	<ul style="list-style-type: none"> • Entire site in public ownership 	<ul style="list-style-type: none"> • Site for new children's hospital is constrained in size and shape by adjoining Exchange Hall complex • New children's hospital would have very limited expansion capacity compared with the proposed maternity hospital
Access	<ul style="list-style-type: none"> • Very good public transport services • Luas stop at hospital • 11 bus services • Good access to the M50 	<ul style="list-style-type: none"> • Risk of traffic congestion near Tallaght town centre at peak shopping times
Planning and design	<ul style="list-style-type: none"> • Favourable zoning • Building likely to comply with density and height standards 	<ul style="list-style-type: none"> • Unattractive visual setting to the north of the site • Planned road through site will disrupt internal circulation at ground and first floor levels
Project delivery / timeline	<ul style="list-style-type: none"> • Cleared site for new children's hospital 	<ul style="list-style-type: none"> • Construction likely to be hindered by constrained site
Value for money	<ul style="list-style-type: none"> • No site acquisition cost • Construction cost likely to be less expensive than on inner city site • Potential for significant operational savings arising from co-location with large adult hospital 	<ul style="list-style-type: none"> • Construction cost likely to be more expensive than on a greenfield site

Our terms of reference require us to advise the Minister on the implementation risks associated with the different options. Some of these risks apply to all the potential locations, while others are site-specific. Where possible, we suggest ways of mitigating risk factors.

General risk factors

Having regard to our site assessment criteria, we identify the following risk factors:

- a) **Health outcomes:** As previously stated throughout this report, we strongly believe that factors which contribute to the best health outcomes for children are of paramount importance. Tri-location with an adult tertiary hospital which offers a wide range of relevant clinical specialities and clear synergies in research and academic activities and which facilitates the provision of transitional services for adolescents, and with a maternity hospital, is most likely to achieve such outcomes. Conversely, building the children's hospital in the absence of such tri-location risks sub-optimal outcomes.

Should the Government decide to choose the option of a greenfield site, we believe that this will need to include an adult teaching hospital, and will have ramifications in terms of significant capital funding, access, planning, procurement and delivery time.

- b) **Site suitability:** Smaller sites are more likely to raise planning and construction issues, and to leave less space for future expansion. An issue for the adult teaching hospital is whether the development of both a children's hospital and a maternity hospital would compromise the ability of the adult hospital to meet its own future needs for redevelopment/expansion within its campus.
- c) **Access:** Inner city sites are more likely to be difficult for construction traffic to access. To minimise such difficulties, early consultation with the relevant local authority is recommended, particularly where temporary access may be arranged.
- d) **Planning and design:** We do not wish to appear to prejudge any future planning application, and it is important to note that, except in the case of the Mater site, we have only seen preliminary feasibility drawings for the proposed sites which were prepared within a very limited timeframe.

A large building of 108,000 square metres will inevitably be bulky, and except in the case of the larger site at Connolly Hospital, is likely be 8 to 10 storeys in height and will give rise to planning issues which can best be addressed at the detailed design stage, in consultation with An Bord Pleanála and the relevant planning authority.

- e) **Timelines:** Where the site is wholly owned by the relevant adult teaching hospital, or where public sector co-owners have indicated their willingness to transfer their lands free of charge, risk of delay in acquiring the site will be minimised.

Some of the proposed hospital sites will involve the demolition of existing buildings and/or the decanting of existing uses to new accommodation within the hospital campus. If one such site is chosen, the delivery programme could be expedited if necessary demolition/decanting works were undertaken (where planning permission for such demolition has already been granted) while planning permission is being sought for the new children's hospital. While this involves an element of risk, the cleared site may prove of benefit to the adult hospital even if the children's hospital did not proceed for any reason; this is a decision which can only be taken by the teaching hospital in the light of their particular circumstances.

In general, construction of the new hospital on a clear site will be faster than on more constrained urban sites.

Site-specific risk factors

Implementation risk factors which relate to specific potential hospital sites are outlined below, with risk mitigation measures suggested where appropriate.

a) Beaumont Hospital:

A major risk is delay caused by necessary demolition of buildings and decanting of existing uses, notably the public car park. Very little can be done to minimise such delay, as planning permission will be required for replacement structures, which need to be completed prior to commencement of construction of the children's hospital. Way-finding to the northern entrance to the campus could be improved, to relieve traffic volumes on Beaumont Road.

Similarly, given the relatively constrained site, it is difficult to see how the planning risks associated with a new building of up to 10 storeys high in a low-rise housing area can be minimised.

b) Beaumont Belcamp:

This is a greenfield site which envisages Beaumont Hospital moving to the site in 2021. This would leave the new children's hospital in a suboptimal state for at least five years. It would require a policy decision by Government and concomitant funding. Part of the site is in the outer airport noise zone. Public transport to the site is currently underdeveloped on the site. Time would have to be allowed for acquisition of the site from its private landowners / NAMA.

c) Connolly Hospital:

Connolly Hospital is a secondary rather than a tertiary hospital, and has a limited research infrastructure compared with the other Dublin teaching hospitals. Substantial resources and time would be required to bring it to a comparable strength.

The current open space zoning does not facilitate hospital development. While An Bord Pleanála is not bound by development plan zoning when determining applications for strategic infrastructure development, it would minimise any planning risk if Fingal County Council introduced a variation of their development plan to facilitate hospital development on the Sports Campus lands adjoining Connolly Hospital. The elected members have indicated their willingness in principle to do so.

d) Coombe Hospital:

Time would have to be allowed for acquisition of the site from its private landowners / NAMA and Dublin City Council.

Existing redundant factory buildings would need to be demolished and any remaining ground contamination remedied. It would expedite matters if the landowner were required to furnish a cleared site prior to its acquisition.

Consideration should be given by both St. James's and the Coombe Hospitals, in conjunction with Dublin City Council, to improving pedestrian access between both hospitals, including crossing a busy road and the opening of a pedestrian entrance to St. James's at the Fatima Luas stop.

e) Mater Hospital:

The original weaknesses identified in the Joint Task Force report in 2006 and that subsequently worked against the Mater site at planning stage have not been substantially mitigated by the addition of the 1861 building complex, which will add site area but not significant capacity. It is not clear at this stage if there is capacity on the site for the proposed maternity hospital, having regard to the scale of existing development and the scale of the new children's hospital. If this proves to be the case,

consideration might be given to finding a site for the new Rotunda Hospital in the vicinity of the Mater.

There also needs to be a clearer focus on addressing public perception that access to the site is difficult, which we do not consider to be the case.

f) St. James's Hospital:

The planning risk arising from the height and mass of the proposed children's hospital could be reduced if the site were to be enlarged. Alternatively, consideration might be given to developing a new maternity hospital on the offered Coombe site, thus allowing capacity at St James's.

Construction access is likely to prove difficult, and would need to be discussed with Dublin City Council at an early stage if the site is chosen.

Finally, overall levels of staff parking on the campus would need to be reduced to minimise traffic impacts.

g) Tallaght Hospital:

It would be helpful if the local road network to the north of the site could be upgraded at an early date, to facilitate re-alignment of the existing hospital entrance road and to provide for construction access to the site.

It is also suggested that the expansion area for the children's hospital should not be used for surface car parking, as removing such parking at a later stage could create delays.

Chapter 13 Conclusions and recommendations

The decision about the location of the new children's hospital is not a simple one. The original decision to build the hospital was made in 2006. Since then, through a number of reviews and reports, there has been a consistency of opinion regarding its need not only for Dublin but nationally and for its co-location with an adult hospital. Where it should be located and what type of adult hospital it should co-locate with have been the subject of debate for as many years. It not only replaces the three existing children's hospitals in Dublin but, because of its size and pivotal role, will be the centre for determining the national standards of care with which we treat our children in the future.

We received many offers and suggestions of sites, the majority of which were greenfield. Should the Minister and the Government decide to choose a greenfield site, we believe that it will need to include an adult teaching hospital, requiring very substantial investment of human and capital resources to develop over time into an adult tertiary hospital with critical mass supported by leading-edge research facilities, and may have ramifications in terms of zoning, planning, procurement and time.

We are of the view that co-location is essential and tri-location optimal. It is also important to note that 70% of the patients attending the hospital will come from the Greater Dublin Area. Therefore, we considered only those site proposals which were supported by a Dublin Academic Teaching Hospital (DATH). Within that group of hospitals, there are differing levels of sub-specialties and academic research. In 2006 the Joint Task Group shortlisted three hospitals, namely St. James's, the Mater and Beaumont, because of their higher levels of clinical complexity. These hospitals are still at that higher level, with St James's Hospital now having the widest range of specialties. However, all three have restricted sites to varying degrees, which they have addressed in their proposals.

This is not a standalone decision; in making it a balance must be struck between the clinical and research synergies that the adult hospital can bring versus the restrictions that an established site will impose. Our assessment of the comparative strengths and weaknesses of the six potential co-location sites for the new children's hospital has shown that, while there is no single perfect solution, some locations are more advantageous than others. Therefore the decision must be based on key parameters including optimal clinical and research synergies, site suitability and planning risk, together with cost and time benefits.

Hospitals' proposals

We considered the proposals from the hospitals which made submissions to the Group. In their indicative costs, some proposals have presented significant cost savings and have included the maternity hospital within the overall budget.

The proposal for the Mater site has been significantly reworked, especially in terms of its height. It also includes the offer of the 1861 building (a protected structure) for purposes such as research and education. This will add space but not significantly impact on site capacity. Whether the site is sufficiently large to accommodate a high quality maternity hospital as well as the children's hospital remains a concern.

Should the Government choose not to go ahead with the revised Mater proposal, we strongly recommend that they take into account in their deliberations the internationally recognised clinical and research platforms that the existing adult hospitals offer and the design and planning restrictions of each site, details of which are outlined in Chapter 10.

From a **clinical and academic perspective**, we identified St James's Hospital as the existing DATH that best meets the criteria to be the adult partner in co-location because it has the broadest range of national specialties and excellent research and education infrastructure. However, the proposed St. James's Hospital plan offers the smallest site for construction of the new children's hospital, albeit with greater site capacity overall (see Table 1 on page 48), has some drawbacks in terms of site suitability and is not without planning risk.

The site adjacent to the Coombe is large enough to accommodate the new children's hospital and to allow design flexibility. Furthermore, corridor-linked co-location of the new children's hospital to the existing Coombe maternity hospital (or a new maternity hospital at St James's Hospital) can establish the maternity co-location conditions for a level 4 Neonatal Intensive Care Unit as defined and recommended by the 2008 KPMG report.

We believe that there are a number of possible solutions that could build on the strengths of the St James's and Coombe proposals, given their proximity to each other, if they presented a joint plan.

From a **design and planning perspective**, the sites adjoining Connolly and the Coombe hospital offer the best potential for future expansion and a landscaped setting.

In our view, the 36 hectare site on the National Sports Campus lands proposed by Connolly Hospital offers an attractive parkland setting and practically limitless scope for future expansion. Access by car is excellent, and existing bus services could be upgraded to meet demand.

However, Connolly Hospital would need very substantial investment of human and capital resources to develop over time into an adult tertiary hospital with critical mass supported by leading-edge research facilities, and even if such resources could be made available it could take several decades to achieve such high standards of clinical and research

excellence. The proposed integration with Beaumont and RCSI, and the Universities, would have to be accelerated.

The site at Beaumont is located in a low-rise housing area, and may face difficulty in gaining approval for a large building up to ten storeys high, and in any event construction of the children's hospital cannot start until the existing multi-storey public car park and other buildings are rebuilt elsewhere on the campus.

The design and layout of the new hospital on the Tallaght site would be significantly constrained by the proximity of an existing apartment complex.

Our terms of reference require us to make recommendations on the next steps to be taken by the Minister and the Government. Once the decision on the site has been taken, we recommend that the following needs to be urgently addressed.

Ambulatory and Urgent Care Centre

The plan for the Ambulatory and Urgent Care Centre must also be revisited in the light of a decision about location of the new children's hospital. The number and location of urgent care centres in the Dublin area can only be determined once the site for the hospital is selected. We also advise that care must be taken in defining the clinical objectives of these urgent care centres, which should not be so large as to undermine the effective working of the new children's hospital instead.

Vision and governance

The creation of a new children's hospital is a major statement by our nation for our children. Since the decision was made, a great deal of energy and thought has gone on the type of building we should have. We believe that in tandem with the building development there should be an integrated national paediatric plan that brings the existing children's hospitals together as a single entity as matter of urgency. Our new hospital will be at the centre of care that will cascade from it to regional centres. In our view, these centres would become part of the new children's hospital rather than paediatric departments in regional hospitals.

To achieve this, we recommend that the Minister considers establishing a Board to run the new hospital and to start working now towards integrating the existing children's hospital services including the Neonatal Intensive Care Units, transport services, regional paediatric units and, ultimately, coordinate all paediatric services in the country under a single budget-holding paediatric directorate. As stated earlier this will also require a significant investment in ICT.

In our view these processes should be undertaken promptly as it will be the governance structures and the people who work in this hospital that will ensure its excellence.